

# CONTEMPORARY ISSUES

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33

## **The Accident at Windscale**

**Andrew Maxwell**

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## STOP NUCLEAR TESTING

The world-wide damage caused by nuclear bomb testing is now a matter of general knowledge. Even the Atomic Energy Commission admits that dangerous radioactive strontium is now present in detectable quantities in the bones of children. Those who would justify continued testing no longer deny the danger, but instead speak of "calculated risk" and "necessary" testing. However, it is evident, since America and Russia already have enough bombs to destroy the world, that no further development of such bombs, even "clean" bombs, can contribute to our military strength.

After months of negotiations the London disarmament talks have achieved only one unwritten agreement: each government is free to continue nuclear bomb testing as before. New bomb tests are now being planned by three powers, and France may soon be a fourth. There is only one way left to end this senseless and tragic state of affairs. *Our government must take direct action and end its own testing.* If this were done the Russian rulers would be forced to abandon their tests or else stand condemned before the world.

There have been protests against bomb testing the world over; in our country by 2,000 scientists and by religious groups. But the most powerful measure still remains: the mass protest of American citizens, comparable to the 34,000,000 Japanese who signed petitions for the halting of the H-bomb tests in the Pacific. Now is the time for Americans themselves to raise their voices.

Those who agree with us on the seriousness of the situation should sign the petition below and send it to us for presentation to the President, write to us for extra copies, and write to Congressmen and newspapers.

### A PETITION TO THE PRESIDENT OF THE UNITED STATES.

As a result of nuclear tests held thus far, radioactive poisons, the most potent and insidious known, have been spread throughout earth, air and sea. It is established that these substances permeate all living things, and can cause genetic damage, besides cancer of the blood and bone.

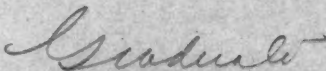
Although for years America and Russia have had enough atomic weapons to destroy each other along with the rest of the world, all attempts to end bomb tests by international agreement have failed. Now new H-bomb tests are planned and the global health menace is critical. The fact that totalitarian Russia includes nuclear testing among the crimes against humanity perpetrated within its borders cannot excuse further tests by the United States.

We, as citizens of the United States, hereby petition our government to stop all testing of nuclear weapons *at once*.

NAME .....

ADDRESS .....

Additional copies of this statement can be obtained free from our New York office.



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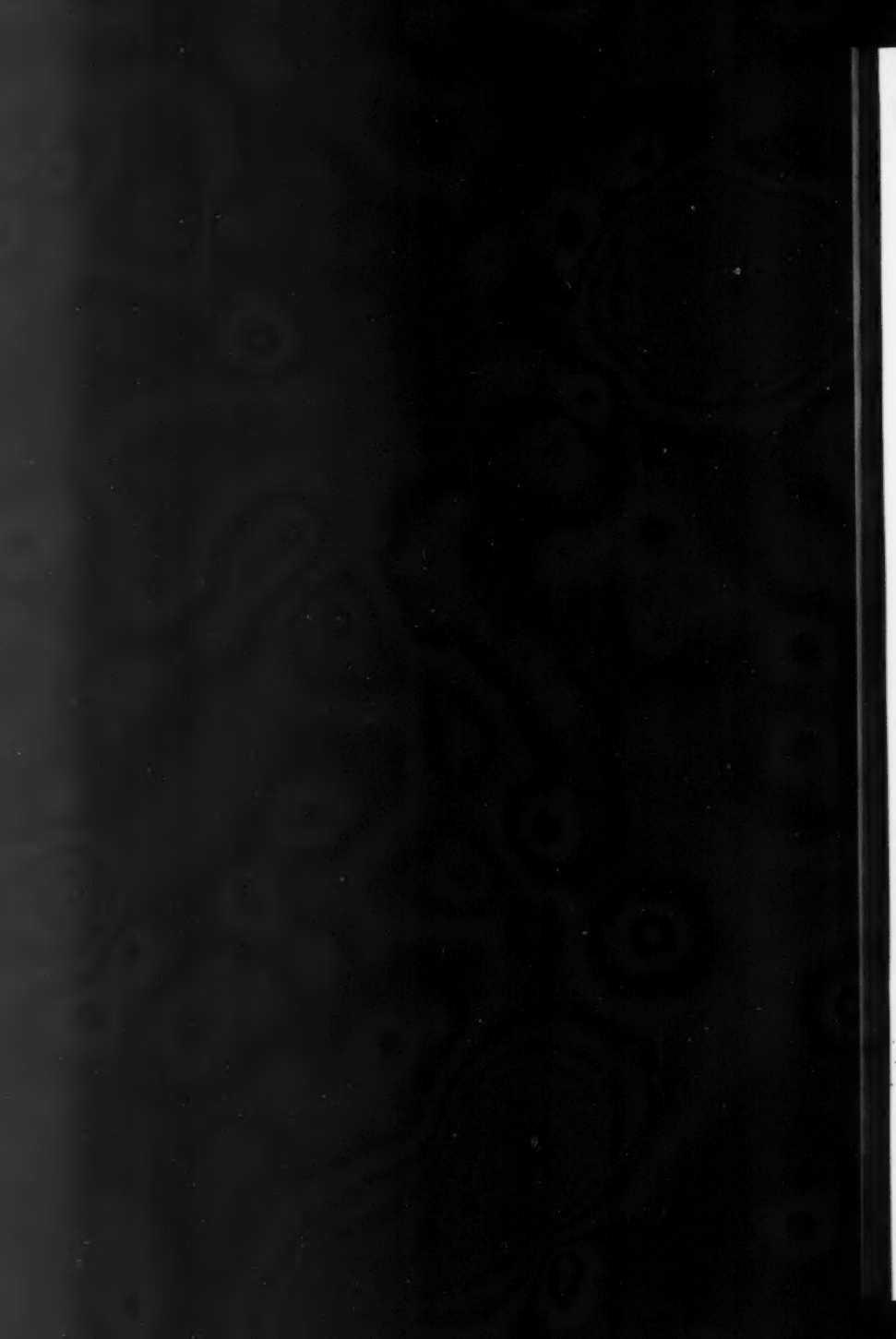
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Andrew Maxwell

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## THE ACCIDENT AT WINDSCALE\*

"I'll be judge, I'll be jury."  
Said cunning old Fury;  
"I'll try the whole cause  
And condemn you to death."  
Alice in Wonderland.

*For neither do the Spirits damned  
Lose all their virtues; lest bad men should boast  
Their specious deeds on Earth, which glory excites,  
Or close ambition varnished o'er with zeal.  
Paradise Lost.*

As the A.E.A. day by day was reluctantly forced to release more information about the events at Windscale, it became increasingly apparent, the moment items were pieced together to form a connected picture, that there had occurred a disaster of considerable magnitude. It may be categorically asserted that, in the absence of general insistence upon a completely unfettered, public inquiry, the whole truth about the disaster and its consequences, short- and long-term, as they affect people, livestock and vegetation in the immediate vicinity and in the rest of the country, will never be known. A searching analysis of the behaviour of the A.E.A. during the relevant period makes it evident beyond dispute that their single concern has been to *prevent* the truth from reaching the public; and in this attempt they have not scrupled to make statements which their own later disclosures have shown to be either downright lies, or treacly equivocations designed to forestall expressions of anxiety with sweet-sounding reassurances. From the point of view of the Government and the A.E.A. this was essential lest the propriety of continuing with the gigantic nuclear power programme be questioned in the light of the dangers so dramatically underlined by the accident at Windscale. The fact that consortia composed of the biggest engineering, electrical and chemical firms in the country have a huge stake in the nuclear power programme (not to mention smaller firms indirectly involved) only emphasises the degree to which the Government and the A.E.A. (itself an enormous industrial undertaking) considered it imperative that nothing of a nature sufficiently alarming to arouse disquiet be made public. Hence the secret inquiry (on the specious plea of security) by a committee under the chairmanship of Sir William Penney, notoriously an advocate of nuclear power for both war and peace, and the father of the "British" (*sic!*) H-Bomb for which Windscale and other nuclear plants produce the required plutonium. It is interesting here to note that when

\* Italics throughout are mine—A.M.

Mr. George Brown asked the Prime Minister in the House on 29th October whether an independent inquiry should be held "under the chairmanship of someone who could also be a scientist or also have technical knowledge, but someone who is not so closely concerned as Sir William Penney is both with the security side of the work and also on the actual experiment that was then going on,"<sup>1</sup> Mr. MacMillan replied that he could conceive of *no man who had the knowledge and was not directly concerned with the matter as Sir William Penney was*. In short: no independent inquiry is, according to Mr. MacMillan, possible. Thus the circle is closed; the public will get such information as the MacMillans, Penneys and others consider fit, subject to the requirements of security. The security of what and of whom is a matter still to be determined. One thing however can be taken for granted: It will not be the security of the public.

In what follows I shall not attempt to do more than present a case-history (so to speak) of the behaviour of the Windscale and other A.E.A. officials. Only incidentally shall I present evidence for the view that nuclear power is inherently a danger to the world,<sup>2</sup> since to go into this matter in detail would distract attention from what is, in my view, the most significant aspect of the Windscale events: the sinister attempt by those responsible to protect their petty minority interests at the expense of the general welfare.

In the nature of the case, there will have to be extensive quotation, for it is important to let the protagonists speak and convict themselves out of their own mouths. The method I have chosen in order to present the matter most graphically is perhaps a little unusual; but the very mass of material required to achieve

<sup>1</sup> A glance at the members of the Committee of Inquiry reinforces Mr. Brown's anxieties:

The chairman will be Sir William Penney, head of the Atomic Weapons Research Establishment. The other members will be Dr. Basil Schonland, deputy to Sir John Cockcroft at Harwell, Professor Jack Diamond, Professor of Mechanical Engineering at Manchester, and Professor John Kay, Professor of Nuclear Engineering at Imperial College.

Professor Diamond and Professor Kay were associated with the early engineering development of the first British atomic power stations. It has often been reported that Professor Diamond was personally responsible for the broad principles on which the Windscale reactors were built. (*The Manchester Guardian*, 16th October).

<sup>2</sup> One indication of the degree of danger will suffice for the present. D. G. Arnott, *Our Nuclear Adventure*, London, 1957, p. 28, writes: "Here again we must stress that the genetic risk from the peaceful uses of nuclear power is one that is presumably [...] going to be accepted for generation after generation [...] and will prove a risk certainly equal to, and possibly greater than, the genetic risk which is incurred by the occasional explosion of nuclear weapons." Despite a careful assessment of the dangers of nuclear power, Arnott finally decides that it is essential on the grounds that without nuclear power economic collapse cannot be avoided. I hope in a review of his book to examine this quite false, if at first sight plausible, argument in more detail. Here, as well, I take the opportunity of announcing that an article devoted exclusively to an analysis of the dangers of the peaceful uses of nuclear power is in preparation and will be published in the near future.

the desired result and at the same time to forestall all attempts at calling in question the picture presented as being tendentious, or whatever other pejorative description is thought best fitted for the purpose, made it imperative to proceed in this and in no other way. I therefore first present the events day by day in the form of quotations from the press (in the main from *The Manchester Guardian*, *The Times*, *The Sunday Times* and *The News Chronicle*), italicising such portions that it is essential should be borne in mind, but without much comment. The second part of the exposure consists of comment together with some additional material of a more general nature.

\* \* \*

### *Saturday, 12th October<sup>3</sup>:*

An official statement issued yesterday, delayed because "their immediate concern was naturally to cope with the incident itself," described the accident, which happened on Thursday afternoon. It was discovered then that some of the uranium fuel cartridges in the centre of No. 1 pile, *which was shut down for the routine discharge of spent uranium and for maintenance work*, "had become overheated to the point of red heat" . . .

"Some oxidation of uranium has occurred. The greater part of this has been retained by the filters in the Windscale chimneys. *A small amount has been distributed over the works site*, and in some areas works personnel have, as a precaution, been instructed to remain under cover.

"Health Physics personnel are carrying out a *continuous check both on the site and in the surrounding district in order to ensure that any increase in the amount of radioactivity would be immediately known. There is no evidence of there being any hazard to the public* . . .

"At this stage it is not possible to give the cause of the accident . . .

"It is quite untrue that there was an explosion. In the beginning there was a fire in the sense that the material glowed, but there was no flame. *It is quite untrue to say that a large amount of radioactivity was released; the amount released was not hazardous to the public and what there was, was in fact carried by the wind out to sea.*" (*The Times*.)

### *At this stage The Manchester Guardian commented:*

There is no doubt that the accident at Windscale is a serious one . . . The Atomic Energy Authority—and indeed the whole country—can count itself lucky that the fault in the working of the reactor was not followed by a considerable release of radioactivity in the surrounding country . . . So far it is not clear what can have caused the trouble . . . the fault behind the accident may have been as simple as forgetfulness to keep up a supply of cooling air after the reactor itself had stopped producing heat . . . On the other hand it may be that the fault was a complicated one, springing perhaps from the use of enriched uranium as fuel for the reactor . . .

<sup>3</sup> The press reports refer each day to statements made by the A.E.A. on the previous day, so that the first statements quoted were in fact made on Friday, 11th October. It is important to remember this, since it materially alters the picture of the A.E.A.'s behaviour.

Again from *The Manchester Guardian*:

Talking to local people, one got the feeling that they had gathered most of their information from the radio ... A publican commented: "I don't think people are particularly worried" ... Seascale, somewhat nearer the plant, seemed equally unruffled ... "Isn't anyone worried about the radioactivity?" asked a desperate reporter. "Well, it's too late to worry about that now," was the reply given, but it was a reply humorously given.

## Sunday, 13th October:

Sir Leonard Owen, managing director of the industrial group of the Atomic Energy Authority said yesterday that pile No. 1 at the plutonium factory at Windscale, near Calder Hall, Cumberland, was now under complete control. "There is nothing to be feared from it." ...

A spokesman of the Atomic Energy Authority said: "*Continuous measurements outside the site confirm there is no evidence of any increase in radioactivity which might have caused harm to the public. The site itself is stated to be completely workable from the point of view of radioactivity. An increase of radioactive levels has been noticed in one or two parts of the site, but not to anything approaching a danger point.*" ... (*The Sunday Times*.)

## Monday, 14th October:

The distribution of milk from farms near Windscale has been stopped because of the radioactivity which it has now been found to contain ... Farmers in a coastal strip seven miles long by two miles wide had been warned by the local police not to distribute *Saturday's* milk. ...

Dr. W. G. Marley, head of the health physics division at Harwell ... was confident that "we don't expect [!] there will be any biological effects. We feel confident that we can cope with the effects of an accident of this kind."<sup>4</sup>

The ban on milk distribution has been imposed because radioactive iodine had been found in milk from local cows at a concentration six times as great as the maximum permissible concentration. Some explanation is necessary here ...

The maximum permissible concentration of radio-iodine is defined as that concentration of the isotope which, drunk day after day for a lifetime, is sufficient to maintain the concentration of radio-iodine in the thyroid at the level which is considered dangerous for adults ...

Since Mr. F. R. Farmer, chief safety officer of the industrial group of the A.E.A., estimated yesterday that in three weeks the concentration of radio-iodine in milk would be a tenth of that now being found, it is clear that by the A.E.A.'s standards the milk at Windscale is not dangerous for adults. ...

<sup>4</sup> A somewhat different picture of the "ability" to "cope" with biological effects of nuclear power in normal circumstances, let alone after accidents, is given by D. G. Arnott (himself a scientist working on this matter) in *op. cit.*, p. 124: "There is an important qualitative difference between dumping radioactive waste sealed in bins into the sea and the free liberation of 'several 100 milli-curies of alpha-emitters a day', which is Windscale's way with the Irish sea. It may well be safe; certainly there are no positive grounds for regarding it as hazardous; but ... can anybody be sufficiently sure that this is so? True, one can never be absolutely assured of safety, but my personal view is that we should wait until we are a lot surer than at present. We know very little more about the inter-relations of plant and animal species than did the man who first introduced rabbits in Australia."

*Children, however, could not drink Windscale milk with safety. ... Mr. Farmer said yesterday that it was consideration of children which decided the authority to stop farmers selling their milk. ...*

Samples of milk have been collected from individual and from bulk supplies to the Milk Marketing Board's factory at Egremont ever since Thursday evening—a few hours after the accident was discovered. Milk collected up to Friday evening was shown by radioanalysis at Windscale and at Harwell to contain less than the permitted concentration. *Friday evening's milk, however, contained six times the permitted concentration, while that collected on Saturday contained a further 'slight increase'. ...*

Mr. Farmer said that so far no isotopes other than radioactive iodine 131 had been discovered in dangerous amounts near Windscale. *Part of the explanation was that the filters in the chimneys prevented the escape of non-volatile fission products from the damaged reactors. In this way strontium would have been largely contained. ...*

The level of the dose of external radiation now being received by people living near the site was twice what it would normally be because of natural radioactivity in soil, rocks, and air.

At this level, Dr. Marley said, the amount of external radiation was less than that considered necessary (by the Medical Research Council) to cause genetic damage. (*The Manchester Guardian*.)

The very next paragraph in the report, coming after these reassurances, puts the situation in a different light:

The total amount of radioactivity released in the accident cannot yet be estimated, it was stated last night. However, Mr. Farmer estimated that less than a thousandth of the total radioactive content of the reactor had been released into the atmosphere.

On this information, the scientific correspondent of *The Manchester Guardian* bases the following calculations:

The power of the Windscale reactors has never been disclosed, but if this is comparable with those at Calder Hall (as is probable) the total activity of the reactor would amount to 150,000,000 curies. (One curie is the radioactive equivalent of a gram of radium.) *By this test the release of radioactivity over Cumberland is probably less than that released in the explosion of an atomic bomb of the Hiroshima type, but not a great deal less. ...*

One last item:

Asked whether a special meeting of the parish council would be called to discuss the position, Mr. Mossop [clerk to the Seascale Parish Council] replied: "That is unlikely at present because the milk position seems to be well in hand. Everything is going on normally in Seascale and nobody seems to be unduly alarmed. *The children have been on holiday this week; they have been playing in the streets and playing fields as usual. No special precautions have been taken by their parents.*"

Notwithstanding this, some farmers had begun to be worried about the possible effect of radioactivity on their livestock:

"A number of us send regular supplies of cattle, sheep and pigs into West Cumberland auction marts. We are now wondering whether farmers in other areas and butchers will want to buy these animals or whether, if they do sell, they will fetch reduced prices. We have never worried about radioactivity until now, although we have been assured that we will get full compensation for any loss suffered because our milk is wasted."

*Tuesday, 15th October:*

The distribution of milk from a further and larger area of Cumberland was banned yesterday ... The total area involved is now 200 square miles and includes the towns of Barrow and Millom which have a total population of about 80,000. ...

The A.E.A.'s statement says that additional steps have been necessary because "the measured level of radioactivity in milk samples taken on a gradually extending survey has not fallen off as rapidly as was anticipated". This is another way of saying that measured levels of radioactivity in milk taken from the new area have proved to be larger than had been expected.

The authority says, however, *that people living in the new area need not fear that milk they have drunk in the last few days will cause trouble.* The concentration of radio-iodine in milk from the new area was said last night [Monday, 14th October] by an A.E.A. spokesman to be between a tenth and a half of the concentration found on farms in the original area specified on Saturday night [i.e., between .6 and 3 times the maximum permissible dose some 72 hours later—A.M.]. ...

On Saturday it was supposed [*sic!*] that this concentration would rise to a maximum and then begin to fall. It would appear that this has not yet begun to happen.

Meanwhile sample testing of other foodstuffs from the area continues. The A.E.A. said that concentrations of radioactive products [kinds not specified and heretofore not mentioned—A.M.] in vegetables had "now levelled off, and would begin to fall" [in the manner of radio-iodine perhaps?—A.M.]. Drinking water from the neighbourhood was also said last night to contain less than the permitted concentration of radioactivity. ...

The speed with which the release of radioactivity from the Windscale reactor was followed by the appearance of radio-iodine in cows' milk is perhaps surprising. Questioned about this last night a spokesman of the A.E.A. *would not say whether it was possible that a release of radioactivity from the plutonium factory started before 4.30 p.m. on Thursday—the time mentioned in the A.E.A.'s first statement on the accident.* (The Manchester Guardian.)

The News Chronicle contains significantly different information:

Traces of strontium—the most dangerous element in H-bomb fallout—were found yesterday in milk polluted by radioactive dust from the Windscale atom explosive plant. ...

The ban on milk deliveries has been extended from 14 square miles to 400 square miles around Windscale—an area bigger than Middlesex. ...

*All this came only 24 hours after spokesmen at Windscale had said there was no fear of danger spreading to more than the 100 farms already affected by last Thursday's leakage from the factory. ...*

... An A.E.A. spokesman ... confirmed that strontium had been found, though he added: "This will need to rise 100 times before there is any cause for alarm."

*But it will worry doctors and scientists that cattle are picking up enough strontium to show itself in milk.* For this fall-out from bomb-tests is being accumulated by people all over the world, and even small additional traces may eventually add up to body damage.

At Windscale an on-the-spot enquiry into the leakage will start today. Among the experts [!] conducting it will be Dr. W. G. Marley, Harwell health physics chief [see his remarks on Monday, 14th October—A.M.].



Two items from *The Manchester Guardian* complete the day's news:

1. An official of one of Carlisle's biggest dairies said that milk sales in the city dropped 15 per cent yesterday because housewives feared it might be radioactive. Carlisle is 50 miles from the area. None of its milk comes from West Cumberland.

2. The ban on the use of milk from farms where grass has been affected by the radioactive fall-out has had an unsettling effect. But in spite of some apprehension among people living in the area there is anger about exaggerated reports in some sections of the press. The suggestion that there has been panic in the district is strongly resented.

### *Wednesday, 16th October:*

Last night ... physicist Dr. Frank Leslie, director of a research team at Windscale, *accused the factory authorities of trying to hush up the extent of the leakage, and neglecting to warn the surrounding population of the dangers.*

*Radiation tests he had carried out in his own garden three miles away at Seascale showed a beta-gamma fall-out far heavier than that from normal atomic tests. (News Chronicle.)*

On this day it was announced that what *The Times* was pleased to call "an independent but secret inquiry" had been ordered.

Manchester's anxieties about the possible contamination of its water supplies found expression yesterday ... in a telegram from Mr. Frank Allaun, Labour M.P. for East Salford, to Lord Mills, Minister for Power. *He received a categorical answer that there was no danger.*

Mr. Allaun asked if tests were being made of Thirlmere Water. Thirlmere is 20 miles from the Windscale Plant, and Hawes, another source of water supply for the Manchester and Lancashire area, 30 miles away. Mr. Allaun said later yesterday that he believed the public should be told the truth: "If the degree of radioactivity is nil, let the Atomic Energy Authority say so. *Before the accident happened some very strange things had been taking place in the Windscale area, though no public information has been given.*"

His reply came in a public statement from the Atomic Energy Authority yesterday afternoon. It said there was "absolutely no risk to the public. Tests have been carried out and are continuing on Thirlmere Water and similar bodies of water in the area. *The levels of radioactivity revealed by these measurements are less than one-hundredth of the levels agreed by the International Commission for Radiological Protection as safe for human consumption.*"

"*This is true both for total radioactivity and for the activity of individual isotopes. It can be stated categorically that there is absolutely no risk to the public in respect of these water supplies. From continuing measurements in the district survey all the indications are that the broad pattern of radioactivity is showing a steady decline.*"

In another statement the authority give some explanation of the extension of "the milk line" around Windscale from an area of 14 square miles to an area of 200 square miles. Certain Press reports, they stated, had tended to give the impression that this extension arose from findings of strontium 90 in the area. "It must be emphasised that the extended control is based entirely on the levels of radioiodine," the statement said. "Checks for strontium 90 have been made by the authority and the highest levels reported are still only [*sic!*] between one-fifth and one-tenth of that which would be safe for lifetime consumption." They add that "the strontium situation is still being watched".



From *The Manchester Guardian*, the following is of interest :

1. On the question of possible danger from other isotopes than those of iodine and strontium, the spokesman of the A.E.A. said last night that the authority was at present convinced that the main sources of danger were the two isotopes mentioned. *No attempts to identify other isotopes were at present being made* [at least no such "attempts" were being made public, a very different thing!—A.M.]. He added, however, that steps were being taken to see that the *sum total of other isotopes than iodine and strontium did not exceed the danger level*.

2. The plaintive comment of an A.E.A. spokesman on the site that a few days of heavy rain would "considerably ease the position" [by washing the radioactivity away into lakes (water supplies) or driving it into the ground to be taken up later by plants, no doubt! —A.M.] is an indication of how the A.E.A. is looking forward to the end of its present torment. [Let others be tormented thereafter!—A.M.]. Nevertheless, it seems that damage to the reactor must be more considerable than was at first thought likely. *Windscale No. 1 may yet provide a means of answering that teasing [sic!] question: "How do you dismantle a useless reactor?"* [Or it may not, and what then? —A.M.]

3. Barrow-in-Furness, Tuesday. . . . Thousands of gallons of milk from the area were poured into the sea. . . . There was at first some confusion on the farms round here about what to do with the milk. The Milk Marketing Board had promised to collect it all . . . but there was obviously so much milk that unless the board could call often all the containers would be full—while the cows were waiting to be milked again.

In the event the board has done what it can and this afternoon a new instruction was given to the farmers, presumably from Windscale, saying that they could feed the milk to calves if they wished or else build special soak-aways [so contaminating the earth and initiating the cycle all over again—A.M.].

This solved Mr. G. J. Mutton's problem . . . as he had a lot of milk to dispose of. But he would still like to know just what the two well-dressed men from Windscale thought of his milk.

The Friesians on his farm usually produce about 70 or 80 gallons of milk a day and like the conscientious farmer he is Mr. Mutton is always anxious to please his customers. Only in the warmest weather—and never in October—is it possible to trace sourness, they say, in any of Mr. Mutton's farm-bottled milk. Even then it is at worst only a bottle here and there. *Imagine then his surprise when three days in succession—last Saturday, Sunday and Monday—he received complaints that almost one bottle in four of his milk had gone sour. The complaint on Saturday was about milk which had been yielded on Friday—the day after the accident at Windscale.* The other complaints were also about milk not 24 hours old.

So Mr. Mutton decided to ask a well-known local dairy to test a bottle of good milk and a bottle of sour. *Just as he was leaving his farm yesterday to do this, the two men from Windscale arrived. They promised, so Mr. Mutton understood, to telephone the results of their analysis within a few hours.*

Up to this evening Mr. Mutton had not heard anything from them. What he had heard, however—and what the whole country heard a few hours after his interview with them—was that the whole stretch of the coast was under the milk ban. Mr. Mutton is quite prepared to accept the fact that this was a coincidence. [But I, however, am not prepared to accept this at all.—A.M.]

Lastly, there was a letter from someone signing himself "Perturbed Scientist" (also in *The Manchester Guardian*):

The Atomic Energy Authority maintains that no dangerous amount of radioactive products were emitted from the Windscale reactor and therefore there was no cause for alarm. Yet it did not know the results of its monitoring till 24 hours after the event. Will the public in the neighbourhood of future atomic power stations rest content with the knowledge that they will be informed of a mishap only after the effects are known?

A second disquieting point is that black smoke was seen to emerge from the chimney. If solid carbon can pass through the filters, so can strontium and plutonium. This raises the further questions: what is the efficiency of the filters and what quantity of long-lived activity has been emitted over the past seven years?

Thursday, 17th October:

Mr. H. G. Davey, works general manager of the Windscale works and Calder Hall station, yesterday met representatives of Whitehaven miners. ... The miners had expressed apprehension about the possibility of radioactive dust from the atomic plants entering the pit ventilation systems.

Mr. Davey said that the filters in the Windscale chimney had stood up to the job exceedingly well and had held back material particles but could not cope with the vapour. There had been no radioactive or dust hazard. In reply to questions about an alarm system, Mr. Davey said a public safety plan had been drawn up three years ago, and at 2 a.m. on Friday the Chief Constable of Cumberland had warned police to stand by. By 11 a.m., however, it was realised that there was no public danger and the stand-by arrangements were cancelled. Mr. Davey declared that at no time had there been danger to the public. (*Manchester Guardian*.)

Meanwhile, we learn from the *News Chronicle*:

Radioactivity from Windscale, found yesterday in three places inside the grounds of Calder Hall, brought building work on Calder Hall B power station to a standstill. But only for an hour. ...

Geiger counters found "high" radioactivity on a crane, packing case, and a weld-plant generator.<sup>5</sup> But scientists assured the men that there was no danger.

A spokesman for the workers' committee said: "We wear no protective clothing. We don't get regular checks as they do at Windscale."

"If they can check equipment, why not us? Who knows what contamination we may be taking to our homes?"

The *Manchester Guardian* reports as follows:

While the A.E.A. seems to be convinced there is no danger for these outside workmen, it is apparently still worried about the effects of excessive radioactivity on animals, as well as in milk. Today there was an official request to farmers in the West Cumberland and North Lancashire coastal districts to warn their local authority of any cattle,

<sup>5</sup> The *Manchester Guardian* on this day gives the following figures:

The figures given to the men on contamination were "counts" of 70,000, 40,000 and 20,000 on equipment such as a lorry, a crane and a welding generator. These counts were taken, or at least reported to the men, after they had attended a meeting in the works canteen at which they were addressed by officials and assured that there was no danger.

sheep, or pigs which might be slaughtered in the next fortnight. The authority wants to ensure that the thyroid glands of all pigs, cattle and sheep are removed at slaughter. . . .

This question of the thyroid gland in animals had thrown up a whole series of fresh anxieties for farmers about the *ultimate effect* of the mishap [!] at Windscale. . . .

An interesting account of the relation between the A.E.A. and the public is given in the same newspaper:

Farmers are becoming impatient and *more mystified* with the instructions they are receiving more or less daily. *Why, one of them asked, had it been "all right" to drink milk on the four days after the accident at Windscale on Thursday but unsafe from Monday night? Why had the radioactivity not been detected over this wider area before Monday? And now that it has been detected what effect might it have on cattle breeding?* Indeed, to broaden the question—and many people here seem to think it could take some broadening—what will be the effect on property generally in the district? . . .

*Time and again at this afternoon's meeting the gap between scientist and layman became all too clear* [The meeting referred to is the one between the A.E.A. and Calder Hall workmen—A.M.]. *Whom could they believe one of the speakers asked. The scientists and their assurances, the "piffle in the press"—or should they just trust to their common sense? [By far the best thing to do—A.M.]. . . . It was felt that complaints had had results. For example, the workmen were now given hot water in buckets with soap before meal time so that they could wash. . . . "The trouble is we have no one to guide us from our point of view—we have to accept theirs," said one of the men. The cry is echoing up and down this part of the Cumberland and Lancashire coast.*

And then *The Times* opines:

. . . There is little manifestation of *real* [sic!] anxiety among the ordinary people.

Departing from strict chronology here for the sake of contrast, I add this from *The Sunday Times* of 20th October:

Mr. Charlie Parker [the only farmer-retailer in Seascale itself] is not perturbed by the situation; . . . and he observes, in rich Cumbrian tones, that he thinks *the Authority did the best thing possible by keeping quiet at the beginning: "If there were a warning you'd have people flying by all the roads". . . .*

. . . The people who live in the shadow of Windscale, who have not been told the difference between "permissible" and "danger" levels of radioactivity, feel it would be only fair [!] to tell them what the inquiry now in progress establishes.

*Friday, 18th October:*

Sir William Penney ordered plutonium production to cease at Windscale atom explosives plant yesterday. Britain thus loses half her output.

One of the two giant piles has been out of action *since last week's leakage of radioactive ash*. Now the second is idle too. (*The News Chronicle*.)

Official readings of radioactivity taken in London last weekend after the accident at Windscale two days before have shown an increase of 20 times in residual activity . . . The A.E.A. . . . added . . . "The increase is not important [for whom?—A.M.]. Viewed in relation to the total background of radioactivity, which is present all

the time, it is infinitesimal." [So indeed, was the last straw infinitesimal, viewed against the total straw; but it broke the camel's back nevertheless!—A.M.]. (*The Times*.)

One delightful point in the comment of *The Times* scientific correspondent is worth noting:

The residual activity referred to is derived *normally* [!] almost entirely from nuclear test explosions.

In *The Manchester Guardian*, the following is of interest:

A spokesman at Windscale told me to-night: "We shall lose no time whatever in freeing the milk [you bet!—A.M.], but we cannot give a forecast of the date." He explained that radiation on, say, grass and in cows' milk, did not necessarily diminish at the same rate. Animals varied tremendously in their reactions to these things. Meanwhile tests were still being made in the whole of the area and beyond its borders and would continue until radiation—which was *not spread evenly but occurred in "hot" and "cool" pockets* [are the levels of radioactivity given by the A.E.A. then "average" levels; and entirely meaningless?—A.M.]—had fallen to the permissible level.

*Saturday, 19th October:*

It is now known that the accident at Windscale a week ago occurred while experiments were being carried out inside the reactor. Nevertheless the A.E.A. maintains its original statement that the reactor concerned was shut down at the time.

In the circumstances it is probable that *some new kind of material was being used inside the reactor, and that its unfamiliar character led to the fire which released large quantities of radioactivity.* (*The Manchester Guardian*.)

In *The Times*, we come across the following:

The United Kingdom Atomic Energy Authority ... to-night issued the first full [*sic*!] explanation of what has happened during and since the over-heating [!] of the Windscale nuclear reactor.

Mr. H. C. Davey, the Windscale general works manager, dismissing *categorically* the possible dangers to health from *virtually* [!] every source other than the intake of milk by young children, told an audience of more than 30: "I hope I have convinced you, not in terms of opinion but in terms of fact [!] and figures [!] that there is no danger in the district."

This was accepted by everyone, although it was said there might be difficulties in passing on *conclusively* to the entire Cumberland population [and others!—A.M.] what the local representatives themselves had been delighted to learn.

Mr. Davey emphasised that hazards to cattle were non-existent and that no question of *future* sterility arose. Water and vegetables were either unaffected or well within the maximum permissible level of safety, and even if *animals other than cattle were obviously affected by grazing contaminated ground* [but quite "unhazardously"!—A.M.] it was only through milk that danger might be present for the young. ...

Mr. Davey said that the level of radioactivity in the Windscale area was negligible, and he offered as *proof* the fact that the pile itself would not work in a radioactive atmosphere—atmospheric pollution throwing the pile out of action.

On the same page of *The Times* we find:

Continuing their investigation into the Windscale accident, Sir William Penney and his three scientist colleagues on the inquiry

committee yesterday entered the No. 2 pile. Sir William Penney had ordered this to be closed on Thursday. [Hence naturally atmospheric pollution could not affect it, as it was also ... out of action!—A.M.] No date has yet been fixed for the inspection of No. 1 pile.

From *The Economist*:

The chimney and its filters are expressly designed to trap escaping particles, and not gases. But the whole plant appears to have been so hot, including the chimneys and filters, that quantities of radioactive iodine, which vaporises at something over 100° C., went out through the filters instead of being precipitated and trapped on them as would have happened at lower temperatures. *The filters themselves are not absolutely efficient, even for dealing with particles, and traces of practically every one of the 40-odd fission products left by splitting uranium atom, including the notorious strontium 90, escaped from the chimney. ... More iodine than any other fission product escaped from the chimneys because it was vaporised in the heat of the fire; but it remains an admitted fact [sic!] that traces of all the fission products have been detected and some of them, strontium in particular, have a radioactive life measured not in days but years. It is a mercy that, so far as is known, these substances have not been broadcast in dangerous quantities.*<sup>6</sup>

Yet in *The Observer* of 20th October, we read:

Mr. H. G. Davey, works general manager at Windscale, told me yesterday that no radioactive substances other than radioactive iodine had so far been detected outside the reactor in which the accident occurred. This is encouraging news [!] because most of the activity of the iodine will die away within two weeks.

An interesting item comes from *The Sunday Times*:

Dr. Frank Leslie, a physicist living at Seascale ... protests against the way the Authority has handled the incident: "First they said the stuff had all gone out to sea, and I knew it hadn't. Radioactive material was coming out of the stack, and everyone walking about underneath not knowing a thing about it.

"Everyone here has inhaled and ingested a certain amount now. It's probably [!] harmless, but you should avoid it if possible. [A gem, this!—A.M.] The immediate precautions are so simple—just shutting doors and windows and so on; with two or three cars the Authority could have warned everybody necessary. But they didn't do a thing until the milk warning."

Monday, 21st October:

The A.E.A. confirmed [how no previous official statement can be subsequently "confirmed" is somewhat puzzling!—A.M.] last night that smoke of some kind [!] was discharged from one of the chimneys of number one reactor at Windscale during the accident ten days ago.

<sup>6</sup> With typical "open-mindedness," it is added:

It is fair [to whom?—A.M.] to add that claims about the safety of Windscale have never been so absolute as those made for subsequent atomic plants. *It was a step in the dark, and the risks it involved were recognised by siting the plant deliberately in an isolated part of Cumberland—just as [N.B.—A.M.] the breeder reactor at Dounreay is being built for the same reasons in one of the most isolated parts of Scotland.*

As for the "isolation", a comment in *The Manchester Guardian* (16th October) puts the matter in its correct perspective:

No-one in Barrow seemed to have realised just how short a blow down the coast it is from the plutonium plant. By car it is several hours.

The authority said that the colour of the smoke was grey rather than black [aesthetically more pleasing perhaps?—A.M.]. The fact, however, that smoke of any kind could get out of the chimney does imply *that the efficiency of the filters at the top of the chimney leaves something to be desired.*

*The Times* obligingly comes forward with the following information:

A development during the weekend was the confirmation by a committee of the Medical Research Council of the *safety standards imposed by the United Kingdom Atomic Energy Authority as a matter of urgency.* These standards were not arbitrary [!], as may have appeared [to whom, since no public statement was made or has since been made, of any lowering of the previously existing standards?—A.M.] but the result of deliberation [!] between Dr. A. S. McLean, group medical officer to the industrial group of the authority, Dr. W. G. Marley, head of the health physics section, and Mr. R. Farmer, chief safety officer to the authority [three cunning old Furies!—A.M.] after further consultation.

Side by side with this may be put a report in *The Manchester Guardian* (24th October):

... Mr. F. Anderson, Labour M.P. for Whitehaven said: "I have had a letter from a constituent who is a scientist which asks: 'Is it or is it not true that since and during the emergency the Atomic Energy Authority's former high standards of safety precaution in relation to radiation dosages, tolerance levels, etc., have been lowered and in some cases disregarded?'"

**Tuesday, 22nd October:**

Twenty process workers from the A.E.A.'s factory at Springfields in Lancashire have been transferred to Windscale to help with the unloading of fuel elements from the damaged reactor there. *The reason may be that the Windscale process workers have already been exposed to their permitted dose of radiation [according to which "standards" one would like to know; the old, or the "new" "emergency" ones?—A.M.]. ... A similar import [!] of "unexposed labour" was necessary when repairs were carried out two years ago. (The Manchester Guardian.)*

**Wednesday, 23rd October:**

Mr. K. Harrison Jones, the Ministry of Agriculture's regional controller responsible for Yorkshire and Lancashire ... explained that radioactive iodine vapour which had at first [*sic!*] been blown out to sea had cooled and had fallen on the surrounding countryside [one is presumably to understand by this that the vapour which also contained fission products other than radio-iodine were *blown back* onto the land—A.M.].<sup>7</sup> He would be surprised [!] if more than an ounce or

<sup>7</sup> *The Times* reports (24th October) from Copenhagen:

A considerable increase in radioactivity over Denmark, unlike the increases noticed after the explosions of atomic and hydrogen bombs, is attributed by Danish health authorities to the Windscale accident. A military research board, which takes regularly measurements of radioactivity, has established in samples fissionable material of the element tellurium, which is present in great quantities in atomic reactors.

The "wave" has now passed away from Denmark [without leaving a wrack behind, no doubt!—A.M.], and it has not been necessary to take any precautions to protect public health.

two fell over the whole 200 square miles. ... Why was it safe to eat vegetables and lettuces which had been grown in the open air and on which the radioactive iodine had fallen? Mr. Jones said that the amount on the outer leaves would be [!] extremely small—probably [!] so small as to be extremely difficult to measure. ...

Farmers, he went on, would have lost some [!] confidence in the safety of the Windscale works and would wonder whether farm produce and livestock from these parts were really safe. "We must all do our best to restore confidence." ...

Many questions were put to the officials by farmers at the meeting. One asked *how much radiation escaped daily from the Windscale piles and how long it would be before all the Cumberland farms would be useless for farming*. Mr. Hughes said that the whole area was continually being surveyed [a most pertinent answer, since no-one knows what standards are adopted, no figures are made public, and there is confessed ignorance about *biological effects!*—A.M.].

"What guarantee have we that this terrible thing will never happen again?" asked another farmer.

Mr. Hughes: The reaction of this particular incident at Government level [!] has been widely publicized and the [!] most highly powered committee are investigating it. There is no doubt that they will ensure that this [*sic!*] incident could not occur again [not difficult to ensure since the Windscale reactors are being "written off", or so it appears from reports—A.M.]. ...

Another questioner asked: "Has anyone been sacked for the lack of speed that was adopted generally throughout this affair? If we farmers make stupid errors we get into trouble quickly enough. Why was Ulverston market not stopped last week? Why was no-one awake to this?"

Another farmer called out: "They shuffled off it."

Mr. Harrison Jones said: "We cannot pretend that the organization that came into being so very suddenly [!] foresaw all [!] the problems and difficulties that could arise. I *think* [!] we have done right in letting the markets go on, because I am *sure* [!] there is no danger from the milk of those animals." (*The Times*).

Despite Mr. Hughes's certainty, however, we read in *The Times* on the same day:

Devon police yesterday warned farmers in the county *who had bought five cows which came from a cattle market at Ulverston, 40 miles from Windscale ... to destroy the milk from the cows. ...*

The cows from Ulverston ... went to Mrs. Nora Toms ... and two other farmers.

Mrs. Toms said ... "I bought three cows at Exeter market, but only one had come from the affected area. ... The police told me she might be affected by atomic radiation and that I must pour the milk down a drain. We have 24 cows and the milk from this particular animal since last Saturday has been going in the churn with the rest and sent to the factory." ...

Mr. Newbury said that his representative bought five Friesians at Ulverston, and he sold them at Exeter market. "I bought them in good faith and never thought for one moment they might have come from the affected area," he said.

Friday, 25th October:

More than 300 Cumberland and Westmorland farmers ... heard Mr. H. G. Davey, general works manager of the Windscale atomic plant, say that the scientists had never expected an incident as great as the one that occurred there a fortnight ago. "You can take it that the Authority are determined that a similar incident will not occur



again." [But what about a different one?—A.M.] ... Mr. F. M. Kearns, the Ministry of Agriculture's regional controller, ... said ... *"We did not make any statement about cattle movements at the beginning because no one could [sic!] say anything useful about that until the limits of the contaminated area were finally [!] settled."* ...

Mr. Davey ... summarized the story in this way: "The situation within the pile on 10th October was quite serious, but at no time has there been a danger to any form of life in the area [excepting, *inter alia*, children!—A.M.]. In addition, there is no danger in terms of airborne or surface contamination." (*The Times*.)

In *The Manchester Guardian* there is a report of a meeting of Somerset farmers:

The Somerset Farmers' Union is worried that the mishap at Windscale may be repeated when the atomic power station at Hinkley Point comes into operation. Mr. F. Hill, of Fiddington, whose farm is five miles from the site, said at a meeting of the union yesterday ... that farmers were concerned about their store cattle trade. "*Other farmers would refuse to buy in-calf heifers from us if they knew they came from farms near an atomic station.*"

Mr. E. J. Garland, the area secretary, said that the national executive was also worried about that question. At the recent public inquiry into the Hinkley Point project, he added, *assurances were given that fall-outs would not happen*. Mr. Hill commented: "*I expect they told them at Windscale that nothing would happen.*" It was decided to ask the Central Electricity Authority [another cunning old Fury—A.M.] if there was any likelihood of a fall-out.

To conclude this painstaking survey, two further reports are worth quoting. On Saturday, 26th October, the following appeared in *The Manchester Guardian*:

It appears that the reactor was shut down for this annealing process [more about this in the appendix—A.M.] to begin early on the morning of Thursday, 10th October. By the early afternoon the temperature of the graphite would have risen to 300°. At 4.30 that afternoon the radiation detectors at the foot of the chimney-stack, through which air is discharged after it has been through the reactor, started to show the presence of abnormally large amounts of radioactivity.

It is clear that by then at least one of the aluminium cans had been ruptured, and that the forced draught of air over it was making possible the rapid oxidation of uranium which is known to occur under these circumstances. This combustion ... is rather as if the uranium is rusting away at a rate which could consume a whole bar of it in a few hours or even less. *The products of the combustion would have been a fine smoke of uranium oxide which would carry with it the radioactive fission products.*

From this point the managers of the Windscale works were caught in a cleft stick. *If they had stopped the supply of air to the reactor to prevent further combustion, the fission and product heat would still have been sufficient to cause further mechanical damage inside the reactor—the melting of fuel rods and so on. On the other hand, it was recognised [N.B.!—A.M.] that if the fans were kept going, there would be a danger to the surrounding countryside through the discharge of radioactivity up the chimney stack.*

*In the event the fans were kept turning, while men were sent into the surrounding countryside to measure the radioactivity of the air. ...*

After quoting Mr. H. G. Davey's account to the effect that by 11 a.m. on the Friday following the accident "a message was sent saying that an emergency would not arise," the report continues:

Why then did an emergency in fact arise? Why did the police have to go round on the Saturday night telling farmers not to distribute their milk? This is probably the most puzzling feature of the accident. For the surveys of atmospheric radioactivity in the neighbourhood carried out between Thursday afternoon and Saturday afternoon showed concentrations which were below the accepted safe level. On the other hand analyses of milk collected on the Friday evening, which became available on Saturday afternoon, showed that the concentrations of radio-iodine in some local milk were far greater than the safe level.

Several explanations of this contradiction are possible ...

These suggested explanations need not concern us, with the exception of the following:

... It may be that the extraordinary facility which cows appear to have of concentrating iodine in milk has been underestimated. In any case, it became apparent late on Saturday that the physical surveys of the area carried out up to then were not a reliable guide to the safety of milk. ...

However, equally interesting is a statement published in *The Manchester Guardian* in this very connection on Monday, 14th October (have all reporters memories like sieves?):

Measurements at Harwell [of milk—A.M.] are a necessary check on those carried out at Windscale because of the possibility that the increased background level of radioactivity which may [!] This is on a day on which in the same column the estimate was given of a release of radioactivity comparable to an atomic bomb!—A.M.] have followed the accident in the neighbourhood might disturb the radio-sensitive instruments there.

To return to the report of 26th October:

The Board of Inquiry ... must also explain why the physical surveys for radioactivity did not predict the biological sequels—but on this point the board may well conclude that we know a great deal about physics and relatively little about physiology. [And with that, amen!—A.M.]

Tuesday, 29th October:

The lifting of restrictions on the distribution of milk from the Windscale area will begin on Thursday. ... Of the original 200 square miles, restrictions will remain in force for about 120 square miles. ... Throughout the whole of the sequel to the Windscale accident the restrictions on milk distribution have been necessary because of the radioactive content of iodine in the milk. *There has never been any suspicion [!] that other radioactive isotopes—strontium, for example—had accumulated to a potentially dangerous degree* [and on what would this lack of suspicion be founded if “we know relatively little about physiology”?—A.M.].

With this the presentation of the evidence is concluded, and it is now time to draw together the threads and put down the conclusions which any *unprejudiced* analysis of the material *must* lead to.

First let us have clearly fixed in our minds what took place. At some stage around 10th October,<sup>8</sup> radioactivity roughly equal to

<sup>8</sup> There is a suggestion that the release of radioactive particles began before 10th October. But the A.E.A. spokesman would not say whether the suggestion was correct.

that following the explosion of a Hiroshima-type atomic bomb was released from the Windscale No. 1 pile, according to the estimate of Mr. Farmer, who, ironically enough, rejoices in the title of "chief safety officer of the industrial group of the A.E.A.". (Perhaps one should not see irony in it, however, as Mr. Farmer was indubitably concerned chiefly with the safety of the A.E.A.) A proportion of this was blown by the wind out to sea in the first instance, only to be blown back later onto the land. Nevertheless, at Seascale, there was, *as was to be expected*, a beta-gamma fall-out far heavier than from "normal" atomic tests. Now for that to be the case, there *must* have been present in the air, *at least from Thursday, 10th October*, an enormous quantity of fission products, including strontium 90, caesium 137, and phosphorus 32, apart from iodine 131. If we leave out of account the immediate dangers from external exposure to radioactivity of this magnitude, there remains the fact *that every living organism for days on end ingested quantities far in excess of even the most optimistic safety standards laid down* of highly-dangerous radioactive substances the somatic and genetic effects of which are universally acknowledged to be disastrous in some, if not in all, cases. Nor is this the end of the story; for in the course of the complex, interrelated life cycles of plants, animals and human beings, the longer lived radioactive elements (the most dangerous ones) become concentrated, either indifferently or preferentially depending on the specific organism, so that there is at least a *tendency* to an increase of the danger originally created by the existence of these elements. Yet again: There is no known method of dealing with radioactive substances which can only lose their radioactivity in the course of natural decay of varying rapidity; once released they enter into a natural cycle to produce therein effects which are *of necessity incalculable and uncontrollable*. And with this we still do not exhaust the hazardous possibilities: Quite apart from the more generally diffused hazard from fall out (residual radioactivity, i.e. that arising specifically from man-made radioactivity, was 20 times greater than usual in London during the week-end following the accident), there arises the further danger to the community at large from the circulation throughout the country of agricultural products, and products manufactured wholly or partially from agricultural raw materials originating from the affected area—and *that for so long as the radioactivity of the longer-lived elements perists*.

This then in brief is the picture of the events and of their generally foreseeable consequences, *that can be put together from the available evidence by a reasonably intelligent and informed layman*. The qualifying clause is not stressed in vain; the purpose is to underscore as heavily as possible the fact that those responsible at Windscale are *experts* who must by definition be presumed to have greater knowledge and to be in a better position to give an accurate account of what happened. That is, if the experts *failed* to do this, the failure *cannot* be ascribed to lack of knowledge, but must be

ascribed to other reasons which caused them to misuse their knowledge.

The immediate reaction of the Windscale officials was to hush up the extent of the disaster. No warning was issued at all until Sunday, and then it related only to . . . milk. It was, so we are told, concern for the health of children that decided the officials belatedly to issue any warning at all. Yet their concern (even limited to children, though why adults' safety should be scorned is not clear) did not prevent them from allowing children to breathe the poisoned air from Thursday, 10th October, to Sunday, 13th October, i.e. *at a time when the atmospheric pollution and the dangers therefrom were at their most intense*. On the contrary, they issued a statement on Friday, 11th October, to the effect that the release of radioactivity had been so slight and confined to "one or two spots on site" as not to present "any hazard to the public". And since that first lie, all the efforts of these creatures (one cannot in all conscience call them *men* who display such callous, brutal indifference to the safety of their fellow-men) have been bent on concealing the fact that they were guilty of it.

Thus, at every stage, it has been accidental, independent revelations that have compelled them to modify their original statements. But never, at any time, have they done more than admit *what had already become public knowledge despite their attempts to draw a veil over the catastrophe*.

To start with, the contention that the contamination was confined within a very small area was a palpable untruth, since it was caused by a cloud of particles at the mercy of *every* wind. There was consequently *no certain means* of knowing how far the contamination had spread; but, in view of the quantity released, every reason for supposing that it was widespread. Furthermore, the Messrs. Davey, Marley, Farmer and others knew that in all probability the heavy discharge of radioactive matter had rendered the radio-sensitive instruments at Windscale untrustworthy, so that even if they had told the truth, *according to their readings of these instruments*, there was every likelihood of this being a false picture, false, that is, in the sense of underestimating rather than overestimating the gravity of the position.

Nevertheless, they persisted in *categorically* denying that radioactive contamination *could be* widespread until Mr. Mutton had begun asking questions about the possible connection between the contamination and the unprecedented number of bottles of sour milk his customers complained of. Only then did they extend the area in which consumption of milk was banned, without, however, to our knowledge, ever answering Mr. Mutton's question. Given the pattern of behaviour of the officials of the A.E.A., one is perfectly entitled to rule out completely the possibility of coincidence, and to assert instead, *that no measurements of radioactivity had even been made in this wider area before Mr. Mutton's questions, but for*

which, the more extended milk ban might not have been declared, and people might have been allowed to go on drinking the poisoned milk in happy ignorance. Even allowing for the extremely fortunate and timely questions by Mr. Mutton, we are forced to observe: Despite their supposed concern for the health of children, the officials criminally permitted them to drink milk which, *three days after the accident*, showed a concentration greatly in excess of the maximum permissible one. To put it more strikingly: The milk drunk contained an *even greater* concentration of radio-iodine than the milk subsequently declared unfit for consumption. And then, to pile Pelion upon Ossa, the A.E.A. had the effrontery to declare that *this* milk was, to all intents and purposes, *harmless when drunk*.

We must here interrupt the story of the milk, in order first to examine further the A.E.A.'s behaviour with respect to how much radioactivity was released into the atmosphere, and of what materials it was composed.

The moment radio-iodine had been discovered in dangerous quantities, they admitted its presence, and simultaneously, and once again, *categorically*, denied that any other radioactive materials had escaped into the atmosphere. Everything else, they then asserted, had been retained by the filters at the top of the chimney. No sooner had they done so, than strontium 90 was discovered *in milk*. (We will see shortly what this signifies.) By implication already, then, there was a likelihood that other fission products had also been liberated into the atmosphere. However, at this stage, the A.E.A. made it known that they were not bothering to "identify" other radioactive elements "for the present". By this they hoped to convey the impression that they did not know what these others might be; and, furthermore, since they still persisted in maintaining publicly the fiction that the filters were, if not as originally claimed 100 per cent effective (with the appearance of strontium on the scene, this could no longer be done successfully), at least almost 100 per cent effective in preventing the escape of particles, that the quantity of these "unknown" elements was negligible.

From this position they did not budge until a letter from "Perturbed Scientist" disclosed that black smoke had been seen escaping from the chimney. Even so, it was almost a week before the A.E.A. admitted that this was so; and then with such equivocation ("smoke of some [*sic*!] kind"; "grey rather than black") that it was palpable that their intention remained a desperate attempt to conceal the truth. Furthermore their statement was issued in the form of a *confirmation*, when there was nothing of theirs to confirm since they had never made any previous reference to this. The "confirmation" then can be seen as yet another essay in making the public (which cannot be expected to remember news given out from day to day over a period of time) believe that the A.E.A. had acted truthfully, in this case, had from the first admitted that smoke might have been escaping from the chimney.

Now the fact of the matter is this: The A.E.A. *knew* (who better, since they had personnel on the spot) that the chimneys had belched

forth smoke. As *experts* they also knew, *a priori*, that in the discharge of radioactivity in quantity from the reactor, *every radioactive isotope produced in the making of plutonium had inevitably to be present*. No "identification" was required to know what was what. I assert, therefore, *absolutely* that they *knew* that the atmosphere had been heavily polluted with, *inter alia*, iodine 131, strontium 90 and caesium 137, from the moment the accident occurred. The degree of their criminal culpability in concealing this is to be measured by the fact that, focusing attention exclusively on the dangers of radio-iodine, they remained at first silent about the dangers of the others whose half-life is measured in years, whereas that of iodine, in days. I do not wish it to be inferred from this that it was unnecessary to signal the dangers of radio-iodine; only that it was in the highest degree irresponsible to make it appear that this was the *only* danger.

The case against the A.E.A. on this score is equally watertight, however, if we accept the inference to be drawn from their statement about not bothering to identify isotopes other than iodine 131 and strontium 90, that they really did not know what else had been liberated. By what right, then, did they not *immediately* set about identifying all the remaining fission-products? By what right did they neglect to do something which was urgently required in the interests of public safety?

However we examine the matter, we reach no conclusion other than that the A.E.A. is revealed as a public enemy, a menace to the welfare of the majority of the people of this country.

To proceed, let us revert to the question of the contaminated milk. When this contamination had reached such a point that even these brutes could no longer permit themselves to remain silent, Dr. W. F. Marley, head of the health physics division at Harwell, had the effrontery to assert that he was confident [*sic!*] in not expecting biological effects, and then at once contradicted himself by adding that "we can cope with the effects of an accident of this kind". To that an ordinary mortal (not connected with the A.E.A.) who has nothing to hide is quite entitled to reply: If there are no biological effects, then there is nothing "to cope with", and Dr. Marley is in that event talking arrant nonsense. But why does Dr. Marley chatter in this fashion? Can it be to cover himself and the A.E.A. in case, despite his "confidence", biological effects should manifest themselves? At any rate, if they do (and who, apart from the impudent Marley's, would have the face to deny the *possibility* of their arising?), what are we to think of the capabilities of the Marley's who, together with the rest of this sorry crew, were, so they aver, taken by surprise by the speed with which cows produced milk highly charged with radio-iodine?

Whether this was a *real* surprise is quite another matter, and for this reason: Radio-iodine (which emits both beta and gamma rays) is an exceedingly toxic substance, and the first *biological* reaction of any organism that has been poisoned is to try to get rid of (to excrete) the poisonous material. Now it is well-known that radio-



iodine exhibits a marked preference for concentrating in the thyroid gland; it is therefore at least permissible to infer that the speed with which the milk was contaminated arises from the excessively high quantity of radio-iodine that was taken into the body. And this in turn reinforces the contention that the release of radio-activity during the accident was very great.

Now there are only two possibilities: either the officials were *not* surprised, but had to *simulate* surprise in public because they had denied that any great quantities of radioactive material had been released—in which case we can add yet one more lie to their account; or they were in truth surprised, in which event Dr. Marley is lying both when he asserts his confidence that biological effects will not take place, and when he assures the public that “we can cope with the effects of accidents of this kind”. Either way, the officials stand condemned of gross dishonesty in a matter gravely endangering public welfare.

With respect to strontium 90, a similar position prevails as with iodine 131. It has been found in milk, and this once more suggests a considerable incidence of strontium which when ingested tends to become *fixed* in the bones. The A.E.A., with what can now be recognised as their customary and unblushing mendacity, dismissed the danger from strontium out of hand, to begin with. “This will have to rise 100 times before there is any cause for alarm.” A day later, however, this was given out in the course of questioning about the presence of other fission products: “. . . steps were being taken to see that the sum total of other isotopes than iodine and strontium did not exceed the danger level.” What is to be inferred from this remarkable statement? Either that no steps were being taken at all with respect to iodine and strontium, or that these *had become unnecessary because the quantities of iodine and strontium already exceeded the danger level*. Since the first inference is obviously untrue, the alternative one must be correct.<sup>9</sup>

The tangle of lies here involved needs some sorting out if one is to appreciate exactly how the A.E.A. plays upon the general lack of knowledge about these matters in order to achieve its particular ends. First, we merely note the original flat lie. It contains however a more subtle equivocation: It is known that strontium 90 *accumulates* in the bones owing to the relative slowness of its decay (half-life: 28 years), and that a certain quantity of strontium is, as a result of nuclear tests, already present in the bones of everyone. Hence, when any more strontium is released, the quantity that might be received by a human being or animal *has to be added to that*

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<sup>9</sup> I leave out of account here the question of whether there can be said to be any “danger level” for strontium at all, i.e. a level *below* which it is not dangerous. On this point there is a certain doubt among scientists, some asserting that there is, others claiming that the danger from strontium is strictly proportional to the dose. In the event by accepting the more favourable hypothesis, I only succeed in making the A.E.A.’s behaviour more damnable.



*already present in the bones*, in order to arrive at an evaluation of the danger *at that point*. The statement of the A.E.A. is, however, concerned only with that amount of strontium which, at that moment, they admitted to having been released from No. 1 pile. Thus, even if their admission had been correct with respect to the actual quantity then liberated, it was false (and *consciously* false) with respect to the hazard it represents for animals and human beings who had ingested it already then, and will continue to do increasingly as they eat contaminated food, long after the atmospheric radioactivity has died down to what is now "normal". That would have been grave enough, had the amount liberated been relatively small. But when from the A.E.A.'s own statements we must infer that the amount *exceeded* the danger level, then, and only then, can we appreciate the situation in all its horror. Only then can we begin to understand and to plumb the vasty abyss of evil out of which the A.E.A. appears in, for instance, the person of Mr. H. C. Davey, Windscale general works manager, who, "varnished o'er with zeal", dismisses "categorically the possible [*sic*!] dangers to health from virtually [*!*] every source other than the intake of milk by young children", "emphasises [*!*] that hazards to cattle are *non-existent* ..."

In flat contradiction to this, it must be categorically asserted: Adults and children have drunk milk contaminated with radioiodine and strontium; both human being and animals have eaten food similarly contaminated, and have drunk water which, after the heavy rains in the district, is most likely to be contaminated as well<sup>10</sup>; and while *no-one* is in a position to state that this will *not* do them harm, even the merest layman is able to insist that there is *at least every probability* that *some* harm will have been done in some cases, and will continue to be done in the future. Only time can show the extent of this damage.

Nevertheless, as late as Friday, 25th October, Mr. H. G. Davey persisted in saying that "...at no time has there been a danger to *any* form of life in the area ...". Who does not recall at this point Hitler's remark that if only a big enough lie were told, people would believe it!

Still, it would be wrong to imagine that it was only the A.E.A. that was involved in the sordid business of trying to dupe (and in great measure succeeding in duping) the public into believing that a disaster had not taken place in Cumberland. Officials of the Ministry of Agriculture, such as Mr. Harrison Jones, were pressed into service and "nobly" "did their bit". Thus, Mr. Jones "thought" the Ministry and the A.E.A. were right in not stopping the market for cattle at Ulveston (what would have happened to Mr. Jones had he "thought" otherwise, one wonders), and he was "sure" [*sic*] that

<sup>10</sup> The A.E.A. all along denied that there was any dangerous contamination of water. Having established the trustworthiness of their assurances in all other respects, I will not be thought eccentric if I register my complete disbelief in this one too. To complete the picture, I recall that water from this area supplies the densely populated Manchester area.

the milk from the cows sold was not dangerous. It would seem, however, that these animals must have "picked up" some iodine "somewhere" on the way to Devon, since the milk from these cows *had become dangerous* by the time they had reached their new owners there, who for their part, before being instructed to throw away the milk, had already sent some of it to the factory!<sup>11</sup>

So from all sides<sup>12</sup> the people living in the area were enclosed in a net of lies, contradictions, plausible but specious explanations, the one and single object of which was to prevent them from appreciating in what danger they stood. Had they had even an inkling of the truth, there would have been a panic, a headlong rush from the district. Even so, their anxieties were not completely stilled; bewildered, they looked about for guidance. But to whom, as was asked despairingly, could they turn, when all those with knowledge chose to protect their own petty interests at their expense?

Still, we have not yet sounded the depths of depravity in which the A.E.A. wallows and waxes fat.

What has up to now been revealed by close examination of the evidence shows, without further need of proof, that the A.E.A. did in fact (as has been alleged) entirely disregard accepted safety standards. Had they not done so they would perforce have had to declare a state of emergency from the moment the accident was discovered, and take steps to evacuate *all* the inhabitants over a wide area with such of their possessions as were transportable.

Yet this crime (in itself worthy of the most exemplary punishment) is made infinitely worse by the fact that the A.E.A. has caused it to be believed that they had taken safety precautions upon *some* standard. Once more it must be agreed that the art of prevarication has, in this specific matter, as in others, been brought by the A.E.A. to such perfection that one is at pains to know how to disentangle one lie from another in order to make clear how these people work. However, the attempt must be made.

The basic fact is, to repeat, that at the time when the atmospheric radioactivity was at its worst, there could, in the nature of the case, be no safety standards, as I have just explained.

Now comes the news that Dr. Marley, Mr. Farmer and a Dr.

<sup>11</sup> If it be objected that these ministerial paladins cannot be "fairly" held to account as, in all probability, they were merely repeating in good faith statements prepared for them by the "experts", I reply: Good faith is not enough when one is in a position of responsibility and deals with matters affecting the health and well-being of others. The objective result of the "good faith" is that thousands of innocent people were once more left helpless in the face of a danger they sensed, but did not understand.

<sup>12</sup> Even those who, like Dr. Frank Leslie, belatedly sounded an alarm, did not have the guts to tell the whole truth; instead, Dr. Leslie made light of the danger he had drawn attention to by saying that the radioactive matter ingested "was probably harmless [!], but you should avoid it if possible". Not a single person who knew what had happened had enough courage, enough moral fibre, nay, enough common humanity, to speak out. Well may the people so grossly betrayed cry out to one another, *Allons, courons, volons, et nous vengeons!*

McLean (group medical officer to the industrial group of the A.E.A.) privily and secretly "lowered" the safety standards of exposure to radioactivity, after the accident.<sup>13</sup> That is in itself a whopper of the first magnitude, since there were no standards to lower.

Yet, to understand the artistry, we must from this point proceed upon the supposition that there were standards to lower.

Of course, it is nowhere specifically admitted that the supposedly existing standards were *lowered* (who could be so foolish as to expect such a frank admission from the A.E.A.?). All the same no other interpretation can be put on the qualification of the *new* standards, as "imposed by the ... A.E.A. as a matter of urgency", especially when we are in the very next breath assured that "these standards were not arbitrary". (One scarcely knows at this stage what language these people are speaking. In what sense are these new standards *not* "arbitrary" one would like to know? They are derived from mere *opinion*, and that, the opinion of parties interested in preventing the nature of the accident from becoming publicly known; they are imposed in a *wholly despotic fashion* by this same tiny group of people; and not only are they despotically imposed, but they are imposed *secretly*. Could anything more arbitrary (in the correct sense of this word) be imagined? Of course, if the word is being *misused* to mean "without good reason", then I shall be the first to admit that the lowering of the safety standards was decided upon for a very definite reason indeed, though I cannot bring myself to allow the "good", which like the *amen*, sticks in the throat.

And what was the point of the belated news (released only on 21st October, almost a fortnight after the accident)? This is where we perceive the art, the lies lying one within the other like so many Chinese boxes:

Though all safety standards had been thrown overboard, the A.E.A. behaved as though safety standards were in operation; *but the pretended standards were not those which the general public assumed them to be (i.e. those heretofore accepted)*; they were lower, new, standards *arbitrarily* decided upon, in case it should ever be asked *how, despite the quantity of radioactivity released, the old standards could have been said to have been applied!*

But to this, so to speak, retrospective self-vindication, this is to

<sup>13</sup> Irrespective of what we may think of these "admitted" lower standards, the fact that the Medical Research Council confirmed them is yet another despicable betrayal, no matter what "reasons" it may give in support of its action. But there it is: When the Powers That Be (and the A.E.A. is very much such a Power!) require it, then to hell with the Hippocratic Oath, and all this antiquated farrago that once determined what professional conduct was humanly and morally permissible. This same Council is now to conduct a (forsooth!) "independent" inquiry based, not as one might imagine upon evidence collected by it, but upon that thoughtfully provided for its consideration by the A.E.A., from which all matter falling under the egregiously elastic provision of "security" will have been carefully removed. That being so, does one need to be seer to "predict" that in *general* respects the verdict will be ... approbation of the actions of the A.E.A. as being in the best interests of the "nation"?

be added: What is said above refers to the time when conditions of radioactivity were at their worst. By now, a month has passed, and atmospheric radioactivity has indubitably died down to a comparatively low level. However, this does *not* mean that the danger from isotopes such as strontium has in like fashion declined in magnitude. And here, another aspect of the viciousness of the A.E.A. comes into prominence, for if the lowered standards were mere slick bluff with respect to the time of the accident, they are real with respect to *future* evaluation by the A.E.A. of the still, and for a long time, remaining danger. Now, nobody knows what these "emergency" standards are (nobody naturally apart from the self-elected guardians of the A.E.A.'s well-being); nobody is in a position to determine to *what* they will be applied, whether specifically to the immediately affected areas, or to the country at large; nobody can even be certain that the previous standards *can* be restored, at least in the immediately affected areas, without yielding results which the A.E.A. would find, shall I say, incommoding.

The only positive result that emerges, in this specific connection, is that, whereas before mere common sense urged one, as a precautionary measure, to regard the assurances of the A.E.A. as questionable, now this same common sense peremptorily enjoins one to reject them out of hand as false through and through.

I now come to the last point in this survey of the A.E.A.<sup>14</sup> during the Windscale disaster, one which will also allow me to broaden the canvas to include such general reflections upon the peaceful uses of nuclear power as such, as suggest themselves merely from the revelations following upon that single episode.

The point in question is this: *the scientists of the A.E.A. expected an "incident" (as they euphemistically call it) of some kind.* This is clear from the statement of Mr. Davey, the general works manager, that the scientists had never expected an incident *as great* as the one that occurred. Ergo, logic asserts, they were *expecting a smaller one.*

Here we uncover what, in this survey, will be the last of the grand frauds perpetrated by the A.E.A. in connection with the accident that *actually* happened, to be gone into.

At a certain point, it was suddenly "confirmed" (in a manner similar to the "confirmation" of the lowered safety standards) that experiments with deuterium and/or tritium (relating to H-bomb

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<sup>14</sup> I cannot pretend in my commentary to have drawn attention to all the sordid details of the A.E.A.'s behaviour. For reasons of time and space, I have dealt only with the most generally significant aspects. And for the rest, the extensive quotations must serve. I could, for instance, have drawn attention to the fact that at Calder Hall, the workmen were callously allowed to remain without protective clothing, and were not even checked for radioactivity, though, as they bitterly commented, equipment was checked. Furthermore, until they threatened to strike, they were not even given soap and water that they might wash their hands *before eating*. As for the contamination they indubitably carried into their homes, there to be passed on to their wives and children—that is another point.

manufacture, that darling child of Sir William Penney's) were in progress.<sup>15</sup>

Now this raises another of those nice (in the sense of subtle) entanglements of the kind already observed.

Let us recall the remarks of the *Economist* to the effect that: "... the claims about the safety of Windscale have never been so absolute [there are then *degrees* of absoluteness!—A.M.] as those made for subsequent atomic plants [which are in contradistinction, *absolutely* absolute!—A.M.] *It was a step in the dark, and the risks it involved were recognised...*"

What "risks" were "recognised"? Why, of course, the risks of an accident!

To put it plainly: The A.E.A. expected an accident of some kind *because this possibility was inherent in the very nature of the Windscale plant itself.*<sup>16</sup>

One may then fairly entertain the presumption that the leakage of the news about the experiments was an "inspired" one, the object of which was nothing other than to deflect attention from this fact by the suggestion that exceptional circumstances *which will never recur* are responsible for the accident. It may, of course, be that the risk *became greater* with the performance of an experiment. But that in no way alters the fact that the risk lay in the design and construction of the plant itself.

There is yet another side to this expectation that merits consideration: It is quite evident that the A.E.A. were not prepared for a disaster of the magnitude of the one that took place. Everything points to the fact that they lost their heads and, at first, did not know where to turn. It was only when they became convinced that despite its gravity they could nonetheless *conceal* it relatively successfully, that the organisation started to work more smoothly. (Even so there is a manifest lack of liason between the various officials who said the most absurdly contradictory things.) This explains how it came about that the Windscale officials at first alerted the Chief Constable to the possibility that a state of emergency might have to be declared, and subsequently informed him that his services would not be required. (Thus, by the way, is also answered *The Manchester Guardian's* plaintive query: How was it that there was and simultaneously was not an emergency?)

<sup>15</sup> *En passant*: I recall that the A.E.A. has all along insisted that the pile was shut down for routine maintenance. Indeed, until the news of the experiments was made public, the inference to be drawn was quite properly that *nothing at all* had been happening in the pile that could possibly give rise to any accident whatsoever.

<sup>16</sup> The same is admitted to be the case with the new "experimental" Dounreay reactor which has, therefore [*sic!*], been sited in a "remote part of Scotland". The risk here is somewhat of this kind: the heavy, welded steel shell which encloses the reactor is *assumed* hopefully to be strong enough to *contain* an explosion of the reactor. And if in practice it proves not to be? Why then the neighbouring inhabited areas will also learn (as did the inhabitants of Barrow) that it is a short "blow" from Dounreay to their homes, no matter how long it takes by car.

But by saying that the A.E.A. were not prepared for a major accident, one admits that they were prepared for the smaller one which they admit to have expected. From this once again it follows, in view of what was said in the previous paragraph, that *what they were prepared for was an accident of such proportions that its very occurrence could be completely concealed from the public.*

Now in view of what has been revealed about the A.E.A.'s behaviour up to now, the further question arises: How can we be sure that such a smaller accident (and indeed not necessarily only one) has not already occurred? We do know that, as *The Economist* reports, the filters at the top of the chimneys "are not absolutely efficient, even for dealing with particles", and we have Mr. Allaun, the Labour M.P.'s word that "*before the accident some very strange things had been taking place in the Windscale area, though no public information has been given*". This points to one or both of two things: Either there has been a previous accident (or have been previous accidents) successfully concealed; or the strange things are due to the continuous discharge of radioactive material from the chimneys (this discharge being a fact I categorically assert);<sup>17</sup> or both.

With this I end the survey of the A.E.A. in relation to the Windscale accident. To sum up: A disaster occurred by reason of a very heavy release of radioactivity which put, and still puts, in jeopardy the health of all living things in an area as large as Middlesex. The extent of the damage *cannot*, in the nature of the case, be yet determined (all contrary appearances notwithstanding) because, as is well known, the *ultimate* effects of radioactive poisoning that does not within a short time kill the organism may take *generations* to manifest themselves. Further, what damage has been done is *irreversible*, an important aspect of the matter which has constantly to be borne in mind in assessing the *quality*, as distinct from the mere *quantity*, of the disaster. That on one side. On the other, I have shown conclusively that the A.E.A., together with other official bodies, has been responsible for one of the most dastardly conspiracies in the history of Britain in concealing from those living in the Windscale area (and also from the general public) the horrifying danger in which they stood, so preventing the *only* safety measure appropriate in the circumstances, instant flight from the contaminated area.

Why was this elaborate conspiracy entered into?

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<sup>17</sup> The late Professor Soddy, the distinguished pioneer of radioactivity, pointedly wrote in a letter published in *Contemporary Issues* (Vol. 6, No. 23, 1955, p. 220): "... True we have the tall Sellafield [Windscale, Calder Hall complex—A.M.] chimneys that appear on the cover page of *Atomic Factories* reproduced in a Sunday paper with the caption stating that the filters at the top prevent the escape of the least traces of radioactive matter, which to a chemist sounds an impossible feat. ... It would be a better way of convincing the public that all's right with the world if some of those making such statements were sent up to the top of the smokestacks to show how long they can continue to breathe the air there and live."



The most obvious answer (already mentioned) is, of course, that the Government has determined upon the building of nuclear-power stations. *The News Chronicle* (15th October, 1957) writes graphically:

Every time you breathe, Britain spends some £10 on the atomic power programme. That is £4 million a week for the next ten years, or £2,000 million in round figures. British scientists are planning to build a chain of 19 new atom power stations in the next eight years, which they say, will save 18 million tons of coal.

As much to the point is an item in the same newspaper of even date:

Britain, it is now expected will supply and build at least £175 million of the nuclear equipment needed [by Euratom—A.M.]. We [!] shall earn another £100 million by processing the fuel elements.

By 1960 overseas orders should be worth more than £300 million and by 1965 the "Big Six" nuclear power groups—which combine some of the best-known names in British industry—expect their business to exceed £500 million.

Britain owes her lead in the atomic field to men like scientist Sir John Cockcroft and atom engineer Sir Christopher Hinton, the new chief of Britain's State-run electricity industry.<sup>18</sup>

It is at their instigation that we shall be spending £4 million a week for the next ten years on the atom power business. This helps to explain why Power Minister Lord Mills has appointed a team of experts to speed things up. . . .

Britain cannot afford delay. More than £400 million has already been spent in the last 11 years, and there's little power to show for it.

*But the experts say we cannot go wrong, and that we shall get our money back.* Right now we are not doing too badly. [Who is the "we" who will get what is undoubtedly *our* money is not stated!—A.M. . . .]<sup>19</sup>

Britain's atomic programme calls for the building of 19 new atom power stations in the next eight years.

Will the "Big Six" be able to cope? Their construction capacity is large. And it is estimated that they will be able to build 40 stations by 1965, which will allow for home and export needs. We can also expect useful earnings from exports of "know-how"—with the steel and engineering work done locally.

It can be easily seen that the decision not to allow the Windscale accident to impede this profitable development of "peaceful" nuclear business was of the nature of an automatic reaction. How indeed would the propaganda ceaselessly carried on for years extolling the safety of nuclear power stations have looked, if it had been made public not only that the Windscale accident was of disastrous proportions with incalculable effects on the health of the community for generations, but also that the kind of reactor adopted for the nuclear power stations to be built during the ten-year programme

<sup>18</sup> How pathetic in the light of this is the decision of the Somerset Farmers' Union "to ask the Central Electricity Authority if there was any likelihood of a fall-out" from the proposed atomic power station at Hinckley Point!

<sup>19</sup> No wonder Sir Frank Spriggs, Managing Director of Hawker-Siddeley (badly affected by the defence cuts in aircraft production) stated recently about Atomic power: "We are trying hard not to congratulate ourselves." (*Evening Standard*, 14th November, 1957.)



was in the light of present knowledge inherently susceptible to accidents of the very same kind?

What would Sir Percy Mills have looked like, who opined not long ago that "... it is not so much that there is a risk, but that people think there is a risk, for we are dealing with highly toxic materials and with power stations of which we have not yet had long experience"? Experts are, however, not so sanguine, and we find it stated in *Engineering* (Vol. 184, No. 4780, 1957): "As yet no atomic power station has operated over a long period and it remains to be seen whether they *can* do so without serious breakdown."

Yet, even if the risks of accident can be guarded against (though no-one can guard against human fallibility, no matter how "perfect" reactors become from a technical aspect, as the Windscale events make abundantly clear), there remain the awesome dangers of waste-disposal and constant radioactive leakages from the plants. And these are inseparable from nuclear power, and constitute the greatest risk associated with it.

So far, Windscale has been discharging its waste water, containing a percentage of plutonium and probably other fission products into the Irish sea. (One remembers the struggle, some years ago, by those living in the Forest of Dean, against the proposed burying of sealed cans of radioactive waste in the Forest.) What is going to happen when the 19 power stations are in full production? No doubt some proportion of the waste will find its way into other industries (as it already does) there to add to the general contamination; but there will always remain a quantity which has to be ... thrown away.

Apart from this there is the constant, if slight, pollution of the atmosphere; for, despite the reassuring chatter about the closed-circuit gas coolants adopted for Calder Hall and the new nuclear-power stations, it remains a fact that, as *The Economist* (19th October, 1957) wrote: "... One is told that a ton of CO<sub>2</sub> is lost from the system every twenty-four hours. What happens to that and could it conceivably become contaminated?"

About man-made radioactivity one can be certain of only one thing, "unnatural deeds do breed unnatural troubles". No-one is able to say what is the minutest quantity of such additional radioactivity (from substances unknown in nature whose behaviour is still in many cases very imperfectly known in their biological aspects) to which human beings, individually and in the mass, can be exposed without ultimate somatic or genetic damage. Common sense impels one to say flatly that, until proved otherwise, *all* man-made radiation is harmful.

It is in the light of this that the very *business-like* (in the strict economic sense of the phrase) assertions of interested parties about the safety of nuclear-power have to be evaluated.

A few representative quotations will close this very summary notice of the hazards of nuclear-power.

1. Dr. B. L. Goodlet, formerly Head of the Engineering and Research and Development Division at Harwell:

"Keeping enormous quantities of radioactivity under complete control without significant [*sic!*] escape for many years, in spite of accidents and industrial and international strife, is likely to be the most difficult administrative and technical problem thrown up by the atomic energy programmes."

2. A Special Correspondent of *The Sunday Times*:

"... Everyone connected with the nuclear power programme had gone out of his way to say that the British type of graphite moderated reactor [as used at Windscale—A.M.] which was to be used was absolutely safe. It was constructionally incapable of blowing up, it had a built-in control which meant that as soon as the temperature of the reactor got above a certain level, its operation automatically shut itself off, and, as Lord Mills himself has said ... 'The chances of an accident with plant of this kind are no greater [*sic!*] than the chances of an accident with many other kinds of industrial plant.' [Only the effects are "some-what" "greater"!—A.M.] ... A nuclear explosion is completely ruled out. *What discharge of radioactive effluent there may be from the station into both the air and the sea is guaranteed to be rather less than you get wearing a wrist-watch with a luminous dial.*

"The only mishap they anticipated [*!*] as remotely possible is that in the unlikely event of a leak in the monolithic shielding encasing the reactor,<sup>20</sup> a certain amount [*!*] of finely divided radioactive dust could be deposited around the station. This would not be dangerous [*!*] provided proper steps were taken at once, but these steps, whilst quite simple to carry out among the few people of a rural district [as in the case of Windscale!—A.M.] would be administratively almost impossible if the reactor were near a densely populated town.

"'Remote siting,' as one scientist has said, 'will turn an accident into an incident,' [as at Windscale!—A.M.] and the A.E.A. point out that whilst the present speed of the entire nuclear power project is possible just because of the way public opinion [*sic!*] accepts [*!*] the nuclear power station at present, one real accident, by shaking public confidence, could seriously affect the whole course of future development." (By some irony this was published on 6th October, four days before the Windscale accident!)

3. Dr. O. R. Frisch:

"The removal of the fission products raises acute [*!*] problems. They are so radioactive that even a small fraction would be grave danger to health and life if it were allowed to escape into the soil, the water, or air. [Those continuously discharged from Windscale into the Irish Sea for the past seven years or so are, no doubt, miraculously not dangerous!—A.M.] However, several methods have been propounded which will allow safe storage for thousands of years, provided they are organised and supervised so effectively that no significant [*!*] leakage is possible." [And what happens if the methods theoretically propounded are

<sup>20</sup> One's confidence is not increased when one reads in *The Times* as a comment on a photograph of the 200-ton bottom dome of the steel pressure vessel at the Berkeley nuclear power station, which will eventually house the reactor: "The vessel will be two-and-a-half times the size of that at Calder Hall. ... Because of the need for speed the vessel was welded away from its foundations."

proved wrong in practice, or the organisation and supervision are not so effective?—A.M.]

4. Mr. H. G. Davey, works general manager of the Windscale works and Calder Hall station, whom we have already "met":

"Approximately ten years ago it was announced that the site of a wartime explosives factory at Sellafield, Cumberland, was to be used for the construction of a large-scale Atomic Energy Establishment. *The horrors of Hiroshima and Nagasaki were still fresh in the public mind* [Naughty public—A.M.].

"Rumours were rife, a variety of devastating effects was promised. . . .

"Gradually, people ceased to refer to the possibility of the factory exploding without warning, or to the men in the district becoming sterile, or to the sea becoming so radioactive that it would be fatal to swim in it, or, in fact, to all those rumours *which could be disposed of by patient explanation on the one side, and the exercise of common sense and understanding on the other*. This is worth stressing because, for some time yet, similar fears will be felt and expressed whenever a site is chosen for an atomic energy establishment."

Lastly, two quotations to show, in terms of the number of people who *understand* (even if they for private ends *misuse* their knowledge) required in these new power stations, how easy it becomes to hoodwink the public:

1. Mr. Davey, once more:

"Of the total personnel only a small number are highly specialised in atomic energy matters. The *great majority* of the people are craftsmen and semi-skilled workers who offered no special qualifications but have been trained in the particular type of work. This training is not difficult, and on the part of the men calls for no more than average intelligence and *adaptability* [!].

2. Dr. B. L. Goodlet, once more:

"All the work will be done by ordinary industrial labour working to drawings prepared by ordinary engineering draughtsmen from the instructions of a *relatively* small number of designers. *Only a few of these designers*—those concerned with the nuclear reactor itself—need have much [!] understanding of nuclear science.

"Operation of the stations will be made as simple as possible, all the routine work will be carried out as a drill, and the standard of discipline must be high. There must, however, be present at all times *at least one man with the knowledge needed to take the correct decisions when unforeseen events occur—as they certainly will. An even higher degree of understanding will be needed from senior personnel at the processing plants dealing with the spent reactor fuel.*"<sup>21</sup>

There it stands: The proliferation of nuclear-power stations will put into the hands of a tiny minority a power the exercise of which in normal circumstances—let alone during the periods when the unforeseen events, which will certainly occur, take place—will place the health of the entire community at their mercy. And this minority will not be accountable in any way to the public which will have no

<sup>21</sup> All these quotations come from *The Sunday Times* Special Supplement published on 6th October, 1957.

means, in normal circumstances, of knowing what it is doing, what risks it is "prepared" to take, or even, as the case of Windscale amply demonstrates, to what irreversible dangers they *have been* exposed without their knowledge.

Those already in this position, those whose ambitions lead them to hope for such a position in the future, together with innumerable scientists whose livelihood depends now upon the supply of isotopes from the nuclear-power stations, all had much to fear from the possible results of public knowledge of the Windscale accident (which might have led to questions of a more general nature concerning nuclear-power as such), and joined, by acts of commission or omission, to produce the conspiracy against the public.

Yet this is only part of the answer, which, true as it may be as far as it goes, conceals rather than illuminates the essence of the matter which may be put shortly as follows:

Since the first successful detonation of the atomic bomb, which proved that in principle nuclear fission could be controlled, the economic significance of the fissionable atom has utterly changed. From being, at first, a sideline, it has become the key factor in present-day economic developments, for peace as for war, and increasingly draws all production in one way or another into its orbit. From the moment it became evident that the atom could be the starting point of seemingly inexhaustible profitable exploitation, competition, "asserting itself with the inexorability of a law of nature", of necessity brought about the dominance of the atom over society, there to terrorise mankind and perhaps annihilate it in an insensate minority-quest for profit.<sup>22</sup> Nuclear developments in peace and war (in their different forms equally catastrophic) are now of the very being of capitalism, in Russia as in the West, and year by year engulf a larger portion of social wealth which they return to society in the form of atomic and hydrogen bombs, rockets, submarines, power stations and a multitude of poisoned and poisonous commodities down to the shortly-promised food "preserved" by irradiation, together with the scientists, technologists, engineers, bureaucrats, business men and others required for the purpose, who have, of necessity, a vested interest in keeping these developments going and expanding.

Social tendencies do not grow in a void, but out of pre-existing circumstances which they use and shape to their own needs. The change in the social status of the atom began at a time when monopoly and the State were already either considerably interlaced (as in the West) or fused into one (Russia). The effect in the West has been to spur on this interlacement. But the atom began its

<sup>22</sup> In this way the question, asked at various times, whether "peaceful" developments in nuclear fission were not begun in order to distract attention from their "warlike" developments with their obviously catastrophic implications, is solved: Whatever may have been the *motives* of those who initiated the extension into "peaceful" developments, this extension was a necessity for capitalism. The motives have therefore, at best, a historical political significance as propaganda.

capitalist existence in war, shrouded with secrecy, fenced off from vulgar prying by an elaborate network of "security measures" enhancing the police-power of the State at the expense of individual liberty. This was carried over as it expanded its previously latent "peaceful" possibilities, since for the capitalist atom, just as for modern capitalism, war and peace are inextricably intertwined (plutonium for bombs, for instance, is manufactured by "civilian" nuclear-power stations). The result: Ever wider sectors of the economy are closed to public inspection and criticism, and for their protection (which is the protection of the capitalist system in its vital parts), the use of undemocratic procedures becomes more widespread and more frequent. Behind this iron curtain of secrecy—drawn against the public rather than against rival governments, for there are no scientific secrets of importance that can be hidden for long from any of the governments involved—irresponsibility flourishes, waste, muddle and error proliferate, and criminal actions, which in their sum total may one day result in the murder of mankind, are constantly performed without the slightest fear of detection or possibility of appropriate retribution.<sup>23</sup> Thus the very conditions in which nuclear expansion for war and peace takes place produces an identity of interest amongst those who know what it is all about in which protection of their positions and of their very skins becomes the prime consideration over-riding all moral and humane obligations to the mass of mankind.<sup>24</sup>

Opposition to the ubiquitous capitalist atom—this satanic, all-pervasive, malignant creature (vastly different from its mere natural counterpart) whose decisive quality is to radiate destruction

<sup>23</sup> Arnott (*op. cit.*, p. 164) writes: "Although, at least in Britain [wonderful little Britain!—A.M.] there has recently been some signs of a thaw in the field of nuclear power, yet even here it is true to say that the development of by far the greater part of the nuclear enterprise has never been subject, even retrospectively, to the criticism of parliament or to the ultimate arbitration of the electorate. By the time information has become available on any particular aspect in question, it has always been too late for anything to be done about it."

Well, let us not set much store by this optimistic belief in the "thaw". Come anything like a Windscale accident, hey presto, and the big freeze is on again in substance, if not in appearance, as the appendix on the Report shows.

<sup>24</sup> J. B. Priestley in an article "Britain and the Nuclear Bombs" (*The New Statesman*, 2nd November, 1957) rightly observed about those engaged in the business of nuclear warfare: "For that matter, why should it be assumed that the men who create and control such monstrous devices are in their right minds? They live in an unhealthy mental climate, an atmosphere dangerous to sanity. They are responsible to no large body of ordinary sensible men and women. . . . We cannot even follow the example of the young man in the limerick and ask *Who does what and with what and to whom?* The whole proceedings take place in the stifling secrecy of an expensive lunatic asylum." Elsewhere in the same article, he writes: "All sensible men and women—and this excludes most of those who are in the *V.I.P.-Highest-Priority-Top-Secret-Top-People Class*, men now so conditioned by this atmosphere of power politics, intrigue, secrecy, insane invention, that they are more than half-barmy. . . ." This applies equally to those concerned with the peaceful atom.

wherever it goes—in essence strikes at the heart of the *system*, no matter what specific aspect of nuclear developments is in question, and, if carried to its logical conclusion, must expose in all their inhuman grotesqueness the activities and character of the compact minority which has made its evil soul its own.<sup>25</sup>

The reaction of this minority to all opposition (including that which it tries to forestall) has from the start been compounded of impudent lies, shameless frauds, brazen assertions for which the slightest shred of evidence is lacking, blatant evasions, cynical denials of established fact—all tintured with callousness, brutality and barbarous indifference to human suffering and misery resulting from its activities.

In this respect the behaviour of the A.E.A. which has been my main theme (and to which the Appendix on the Report adds yet more revealing touches) is in nothing exceptional, beyond the fact that the accident has enabled one to get, for the first time in Britain, a comprehensive picture of its sinister import.

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No immediate prospect exists of restraining the activities of the A.E.A. or the expansion of the nuclear industry into all spheres. Yet the danger is immediate, and the future grim, unless action be taken to put a stop to this fateful development.

The first, imperative, requirement is for information, that an independent public opinion may arise no longer open to being deceived by those who have business interests in presenting a rosy picture of the social consequences of nuclear industry. With a knowledgeable public opinion, there is every hope that common sense will assert itself and compel the restoration of social endeavours to more rational purposes.

14th November, 1957.

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<sup>25</sup> There is something monstrous in the spectacle of the Penneys, Hintons, Cockcrofts and innumerable others willingly serving the anonymous power of Capital (much as they imagine themselves to be serving the State which is itself but another servant of this same *eminence grise*) for a salary that, considered absolutely, is a mere pittance. The capitalist of former times, so long as he was not ruined by his competitors, at least saw the shekels rolling in, growing into a fortune, and enjoyed the satisfying illusion that all this was due entirely to his own genial business acumen. But what grim, secret and unnatural satisfaction can these present-day lackeys of Capital derive from their nefarious activities which do not even bring them any considerable material reward?

## APPENDIX: THE OFFICIAL REPORT ON THE WINDSCALE

## ACCIDENT (Cmnd. 302)

The Report, published on 8th November, 1957, contains a number of interesting remarks which substantiate deductions I had already made in my comments.

## 1. Previous Accidents.

The A.E.A. admit that there has been a previous accident which was concealed from the public:

7. A spontaneous release of Wigner energy occurred in the Windscale No. 1 pile [the one in which the present accident occurred! —A.M.] in September, 1952, whilst the pile was shut down. This led to a rise in temperature of the graphite but the rise was not dangerous and there were no harmful effects.

Considering that the burden of the Report is, with respect to health hazards, that "it is in the highest degree unlikely that any harm has been done to the health of anybody", one must take the remark that in the previous one "there were no harmful effects" with the appropriate ton of salt. An ordinary mortal may ask: If there were not harmful effects, why has the accident been kept a secret for five years?

## 2. Radioactive Discharge from Windscale Before the Present Accident.

In determining the hazard from strontium, the Medical Research Council state that: "We have also taken account of the possible contribution to the total contamination with radiostrontium by emission from the Windscale plant prior to the present incident."

The fact that this was thought necessary suggests that the Medical Research Council consider this "possibility" much more of a certainty than they care to admit in public. When could the emissions have taken place? During the previous accident (from which "there were no harmful effects"), or during the discharge of the coolant air in "normal" conditions, or both. If we accept, for argument's sake, the statement that the previous accident produced no harmful effects, then it must have occurred during "normal" discharge. The only remaining possibility is that it occurred in the course of accidents (not revealed) of a kind different from the two that are known.

## 3. What Was Discharged During the Accident?

18. For a time the Health Physics Manager thought that the activity which was escaping from the top of the stack was normal fission products and he therefore had to plan on the assumption that



*the main risks would come from Iodine and Strontium. By [Saturday\*] morning he had obtained the first analysis of the milk samples and the first results on the activity collected from the air in the Windscale works. There was agreement that the activity contained a far greater proportion of Iodine activity than would normal fission products. Having obtained this result, the explanation was clear. Iodine vapour had come through the filter but the major part of the particulate material had been caught by the filter.*

Contrast with this the statement made by a spokesman of the A.E.A. on Tuesday, 15th October:

*No attempts to identify other isotopes [than iodine and strontium -A.M.] were at present being made.*

Contrast again with this the statement of Mr. H. G. Davey, works general manager at Windscale, reported in *The Observer* of 20th October:

*... No radioactive substances other than radioactive iodine had so far been detected outside the reactor in which the accident occurred.*

As for the efficiency of the filter, it would be interesting to know *when* the samples of air analysed were collected that, upon analysis led to the conclusion that the major part of the particulate material had been caught by the filter. It is known that the majority of the fission products released by the splitting of uranium atoms are very short-lived indeed; and a layman (such as I) cannot help presuming that conclusions about the nature of the release of radioactivity obtained from samples collected when that radioactivity is at its peak will differ from those obtained from samples collected after the peak has been passed. Confronted by the two "contrasting" statements quoted, I certainly cannot, without supporting and unimpeachable evidence, accept the conclusion drawn in Paragraph 18 (of Annex II) about the efficiency of the filter, and by inference about the nature and quantity of the radioactivity discharged.

#### 4. How Much Radioactive Material Was Discharged.

a. Referring to Iodine, the Medical Research Council notes (Paragraph 24, Annex III): "Having only a short life (8 days half-life) and being only present in considerable amounts within a relatively short distance of an atomic bomb explosion ...," thus

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\* The "suggestion" is given point by the following (Paragraph 16):

The picture that the Committee pieced together revealed that, as a result of the second nuclear heating, graphite temperatures gradually rose through Wednesday, 9th October. This led to the oxidation of the uranium which had been exposed by the overheating. *The exposed uranium smouldered throughout the course of the day, 9th October, and gradually led to the failure of other cartridges and their combustion, and to the combustion of graphite. By Thursday evening the fire had spread and was affecting 150 channels in a region of rectangular cross section.*

Why was this not discovered at once? Because, forsooth of "faulty instrumentation"!

confirming the calculation, made by *The Manchester Guardian* Scientific Correspondent, which I have used.

b. It is difficult to assess the degree of contamination. The following remarks are made at various stages in the report:

1. (Paragraph 17, Annex I.) During Wednesday, 9th October ... At 22.15, the fan dampers were opened for 15 minutes to give positive air flow through the pile. The dampers were opened again for ten minutes at 00.01 on the 10th October, for 13 minutes at 02.15 and for 30 minutes at 05.10. ...

(Paragraph 18.) At 05.40 on the 10th October, at about the end of the fourth damper opening, the pile stack activity meter near the filter at the top of the stack showed a sharp increase. *This was noted by the Physicist who was then on duty but no special action was taken because he regarded it as a normal [sic!] consequence of first movement of air through the pile and up the stack.*

(Paragraph 19.) Between 05.40 and 08.10 the pile stack meter showed falling readings, but at 08.10 the activity began to rise steadily. Soon after noon, high activity was reported on the roof of the Meteorological Station.

(Paragraph 20.) ... At 12.10 therefore, the dampers were opened for 15 minutes, and at 13.40 were opened for 5 minutes. *During the openings, the pile stack meter showed a sharp increase.*

(Paragraph 21.) These effects suggested [!] to the operating staff the existence of one or more burst cartridges [of uranium]. At 13.45 the shut down fans were switched on. ...

(Paragraph 22.) Being unable to operate the scanning gear [which had jammed as it had "*at the end of the previous Wigner releases*" —A.M.], recourse was had to another activity-measuring instrument which could take samples of air coming from the pile provided that the turbo-exhausters were running. This meter showed a large increase.

What can be deduced from this is, therefore, that at various times during the night of 9th October and the early hours of 10th October, the total time amounting to 68 minutes, air heavily charged with radioactive material was passing up the stack, the activity meter of which at 05.40 on 10th October, showed a sharp increase. (Nowhere is it stated that readings were taken *before* 05.40.) If fission products were discharged from the stack during the day of 10th October, then there is reason to suppose *that these were being discharged before, during the night of 9th October/10th October, i.e. during the 68 minutes up to 05.40 on 10th October when the dampers were opened, and nobody was taking the slightest notice.*

Observe then the following remarks in Annex II:

(Paragraph 1.) *On 10th October, between 11.00 and 14.00, a 3-hour air sample was taken outside the Health Physics Administration building. The sample gave a count of 3,000  $\beta$  d.p.m./m<sup>3</sup> compared with a normal level of 200 to 300  $\beta$  d.p.m./m<sup>3</sup>. ... From 14.15, half-hourly air sampling was undertaken over the Factory site, at some 10 to 15 different points.*

(Paragraph 2.) Rising air counts led to an instruction, *at 01.33 on 11th October*, that workers should stay indoors and should wear face masks ...

For two days and nights therefore the workers were allowed to breathe air, and to be exposed to radiation, *at least* between 10 and 15 times greater than the "normal" level. (What these previous levels actually were it is not possible to say definitely since no measurements were taken before 11.00 on 10th October.)

Now comes the Medical Research Council (Annex III, Paragraph 5) to say:

The existence of the accident to No. 1 Pile was *recognised* at 16.30 hours on 10th October and by 15.10 hours on 12th October the pile was cold. *We have therefore taken the period between these two times as the only [sic!] one in which emission of radioactive material could [sic!] have occurred ...*

Its conclusions about the dangers to which the workers were exposed have consequently no validity whatsoever.

But let us continue with the Committee's report (Annex II, Paragraph 3):

The air contamination rose to a worrying but not dangerous level [sic!] during the morning of 11th October. *The values were patchy and varied with time.* Expressed in terms of a maximum permissible exposure to any fission product in air, by I.C.R.P. standards, for life-time breathing, the values recorded rose from about two at 14.00 on 10th October [in which "patch"?—A.M.] to values in the region of five to ten during the night, with a few exceptional peaks *as high as 150* on the following morning [naturally, nobody went near those "patches"!—A.M.]. By 12.00 on 11th the air activity was dropping fast and the value was one to two.

How reliable are the quantitative estimates given as a guide to the amount of radioactive material actually discharged?

We find in Annex II, Paragraph 13, the following:

A note of wind directions is necessary to appreciate [1] some of the developments concerning public health. Throughout Thursday [presumably from 00.01 hours—A.M.] the ground wind was light, but mainly off-shore, i.e. N.E. or N.N.E. During the night it changed to N.N.W. and throughout Friday a 10-knot wind blew, mainly N.W. and N.N.W., i.e. down the coast. Still later it appears to have changed to a S.W. direction.

(Paragraph 14.) There may well have been an inversion at a few hundred feet above ground level during part of the period when radioactivity was escaping through the filter; and the winds above the inversion may not have been in the same direction as the ground wind. The fall-out pattern as it is now known strongly suggests meteorological conditions of this type.

That is to say: *at ground level, roughly speaking, radioactive material had been blown out to sea for almost twelve hours before any readings of air activity were made.* The estimates given in the Report are therefore no indication at all of what was in fact discharged by the stacks.

Furthermore, since winds were in all probability blowing in different directions from this at some hundreds of feet above ground, a proportion at least of the contaminated air will have been blown *inland* to an unknown distance before the radio-active particles

floated down to earth. Hence, there is every likelihood that a much larger area than the one admitted to has been contaminated to some extent. The area being the famous Lake District, some of whose waters supply Manchester, there is once more every likelihood that part of the Manchester water supply now contains a definite increase of strontium and possibly of caesium.

From the Report it is not possible to gather exactly (even in the Committee's estimates) how widespread the contamination was. It is however suggested by implication that it was not very widespread.

(Paragraph 15, Annex II.) At about 15.00 on Thursday, 10th October, a [!] survey van was sent out to make district surveys in the downwind direction of the ground winds, i.e. along the cinder track towards Seascale. Because it is so much quicker to make gamma measurements than measurements of air activity, most of the measurements made were of gamma activity in order to cover the greatest possible area. The highest gamma reading recorded was 4 milli-R per hour on the Bailey Bridge near Sellafield station. This reading was mainly due to the activity in the plume. A second van was sent out about 17.00 to the north of the factory [how many miles away?—A.M.] and likewise spent most of its effort in measuring gamma activity in order to delimit the contaminated area. These two vans maintained continuous patrols throughout the night and the next day.

(Paragraph 16.) Some measurements, however, were made of the air activity on 10th October. The highest reading obtained was on the Calder Farm road at 23.00 and the value was about the same as in the Calder Works, i.e. some 10 times greater than I.C.R.P. level for continuous lifetime breathing. ...

(Paragraph 29.) It was represented to us that warning of an emergency ought to have been conveyed to the inhabitants of the area surrounding the Works. Two witnesses reported that high levels of activity had been measured on grass and on clothing in Seascale, and on clothing of people cycling to work along the track from Seascale on the morning of 11th October. The Health Physics Manager was satisfied [*sic*!], from the district measurements already mentioned, that no district radiation or inhalation hazard existed: there was therefore no occasion to issue a district emergency warning, which would have caused unnecessary [!] alarm. The activity measured on the clothing of the two witnesses mentioned above was some 20 times lower than that which would have constituted any hazard in accordance with the standards observed by the Authority and based on the Medical Research Council tolerance levels [what these standards are is not stated; nor why *in these cases* the previously used I.C.R.P. standards have not been used.—A.M.].

The Medical Research Council, naturally enough, endorse this (Annex III, Paragraph 16):

The risk from inhalation was as insignificant outside the works as it was inside. The risk from external irradiation at the levels recorded [*sic*!] can also be discounted. ...

Leaving aside for the present how the assessment of the danger such exposure represented was arrived at, we close this section with a quotation from D. G. Arnott's "*Our Nuclear Adventure*," p. 121:

It may be hoped therefore that stack radioactivity is a passing phenomenon; but where it is present it is not to be lightly disregarded, for the hazard of activity discharged by a stack varies greatly with differing weather conditions. Parker presented at Geneva a detailed study of the way in which the stack discharge is treated under

different atmospheric conditions. Among many other points of interest he stated during temperature-inversion *maximum fall-out of radioactivity from the flue gas may take place as much as 20 miles from the chimney whilst the hazard around the plant itself is negligible*. Many instances are known in which animals in particular [and human animals?—A.M.] and occasionally plants, are found to have incorporated into their bodies quantities of radioactivity arising from flue gas.

In short, the readings of atmospheric radioactivity taken at Windscale tell us nothing whatsoever (even if we accept them as correct for the area to which they refer) about the degree of widespread contamination. Further, if maximum fall-out of radioactivity from flue gas can take place 20 miles from the chimney in *normal* conditions, is it not probable that it can take place at much greater distances when abnormal discharge, not only of gas but of particles, takes place?

### 5. The Danger From External Exposure and Inhalation.

We have seen that the Committee base their conclusion that there was no danger on the I.C.R.P. standard *for lifetime breathing*.

Now even if a layman accepts the I.C.R.P. standard (without, to be sure, knowing what it means, and upon what it is based), he nonetheless arrives at this position by the exercise of a little common sense:

The maximum permissible exposure refers to a steady concentration worked out, one assumes, in relation to the rapidity with which the human organism can dispose of any cells injured or killed by irradiation, i.e. at that rate, the rate of damage to cells is such that the organism can cope with it and preserve its health in all integrity. If the concentration is doubled, the ability of the organism to cope with the damage is halved, or, if not halved, at least lessened. And this inability increases as the concentration of fission products in air rises; but, because of the complexity and interrelation of the biological processes that make for a healthy equilibrium, there is every reason to suppose that the inability of the organism to cope with damage increases in geometric rather than in arithmetic proportion to the degree of radioactive poisoning.

The Committee's conclusions disregard these considerations entirely and, even if one were to accept their quantitative estimates of the degree of radioactivity in the atmosphere for the periods to which they refer, must be rejected out of hand as presenting a *qualitatively* false picture of the danger.

Equally reassuring conclusions are drawn from the recorded measurements of total body radiation (external) received by workers. Thus the Committee (Annex II, Paragraph 6):

We have examined the total body radiation records of all workers concerned in the accident. It is necessary to distinguish between exposure during the accident itself and exposure over the standard control period. The I.C.R.P. tolerance level, which was formerly 3.9 r. per 13 week period, has recently been reduced to 3.0 r., and *this is the standard now in force at Windscale works*. Over the 13

week period up to 24th October, 1957 [i.e. including the accident] only 14 of the workers concerned in the accident exceeded the maximum permissible level. The highest figure recorded was 4.66 r. *Records of exposure during the accident itself are not as reliable as the 13 week records, as the latter are taken from film badges, the former from quartz fibre electrometers which give an approximate reading only.* According to the Q.F.E. readings, two workers received 4.5 r. during the accident, one 3.3 r. and there were four others in excess of 2 r. All the workers who received doses in excess of the maximum permissible level have been taken out of contact with work involving radiation, in accordance with standard procedure.

We note, to begin with, that the *actual* doses received both by these workers and by all the remainder are in fact not known; they may be lower; but they may equally well be higher than the approximate readings.

The Medical Research Council (Annex III, Paragraph 8) add the following :

Records for the total body irradiation, as measured by film badges are available for the 13-week period up to 24th October and include the time of the accident. During the accident quartz fibre electrometers were worn as well, and the readings from these corroborate the records exposures shown by the film badges. [How can they, if the readings are only approximate? Furthermore, from the Committee one was given to understand that the film badges were the accurate readings. Now it appears that the latter need to be "corroborated" by *approximate* readings!—A.M.] Fourteen workers concerned in the accident had exposures over the normal 3.0 r. for the 13-week period. The highest had 4.66 r.

It should be realised that the aim is always to keep the level below the 3.0 r. in each 13-consecutive-weeks period. *Normally exposure is only a small fraction of this.* Should, however, 3.0 r. be exceeded by a small amount, as in the highest exposure recorded here, then, provided those exposed are removed from contact with radiation for the requisite period, *it can be assumed that no ill effects of any sort will follow.*

The same considerations suggest themselves here as did with the previous "standard", viz., surely there is a difference between receiving steady small doses of external radiation, for instance, 0.033 r. per day during a 13-week period, and receiving a sudden large dose in one or two days? It is well-known that one can, without ill effect, consume a quantity of arsenic, provided it be taken in small enough parts over a sufficiently long time, which, if taken at one fell swoop, will be fatal. How should this not apply to radiation which is the most toxic substance known?

If this is the case (and it would have to be shown that it is not), *then the I.C.R.P. standard of tolerance has nothing to do with the matter at all since it refers to something quite different, and cannot be used to determine either the degree of danger to which the workers were exposed, or the possible effects on their health.* And with this we leave entirely out of account the genetic effects for which no safety or tolerance dose exists, the damage being strictly proportional to the dose.

To sum up: If what I have suggested is true (is there no "disinterested" scientist who will come forward to make a statement

on the matter in public?), then the whole chatter in the Report about safety standards is a disgusting trick by means of which the A.E.A. seeks to prevent public knowledge of the fact that during the accident no standards were or could be in operation. Credence is given to this by a remark in Annex IV, Paragraph 3:

In the light of the findings of the Committee of Inquiry regarding health and safety the Authority [the A.E.A.] have requested the Medical Research Council to lay down for the guidance of the Authority the maximum permissible level of exposure to radioactive substances when exposure takes place for a limited period rather than as a continuous life-time dose.

If the maximum permissible dose in the case of accident (for that is what the A.E.A. want to know) is not known, how can, and how dare, the Committee and the Medical Research Council assert that there has been no danger? And who is the Medical Research Council that it arrogates to itself the power to juggle with "standards" and to determine for the people of this country to what point it is "safe" for the A.E.A. to go on poisoning everyone and everything?

#### 6. The Danger From Iodine.

Once again, the Medical Research Council and the A.E.A. have devised their own "standards". A few quotations will suffice to show what we are to think of them.

(Annex II, Paragraph 20.) *No established tolerance level existed for radioactive Iodine in milk but the Health Physics Manager had in mind a paper ARC/RBC 5 by Scott-Russell which suggested 0.39  $\mu$  c. per litre as the level beyond which Iodine in milk would be a hazard to infants.*

Thus baldly Paragraph 20. Turning to Annex III, Paragraph 24. (The Medical Research Council's Report, as distinct from that of the Committee headed by Sir William Penney), we find the following qualification:

... The figure of 0.39  $\mu$  c. per litre that is mentioned in Paragraph 20 of Annex II was a suggestion that had been put forward for defence purposes. It was an estimate of the level of risk that could be accepted for a period of a few weeks if a population had either to subsist on contaminated milk or go without.

Comment is not necessary. To return to Annex II:

(Paragraph 21.) The first analyses of milk [on Saturday!—A.M.] showed Iodine 131 contents ranging from traces to 0.48  $\mu$  c. per litre, but when the analyses of the Seascale morning milk of Saturday, 12th October, was completed at 3 p.m. and showed 0.8  $\mu$  c. per litre, the Health [sic!] Physics Manager advised the Works General Manager that in his opinion the distribution of milk gathered from the immediate [sic!] vicinity of the Works should be stopped.

(Paragraph 22.) There followed several hours of consultation ... between the medical and health physics experts [sic!], in order to establish the limits of radio-iodine content beyond which milk should be taken out of distribution. This was calculated, by reference to probable [!] absorption into the thyroid gland of young children [the "average" child, no doubt, who does not exist—A.M.], at 0.1  $\mu$  c. per



litre, a figure which was subsequently endorsed both by the Authority's medical consultants and by a meeting specially convened by the Medical Research Council as representing a reasonable assumption.

In fact what the Medical Research Council did say (Annex II, Paragraph 24) was, that *"this figure was sufficiently correct for the particular situation."*

Elsewhere we find (Annex II, Paragraph 27):

A thyroid iodine survey has been made and is continuing among the local inhabitants round the works [hundreds, if not thousands, of adults and children had drunk the milk in a wider area and for an even longer period before the extended ban was imposed—A.M.]. The situation is similar to that among the people at the works. The highest thyroid activity measured among adults and children [how many have been measured?—A.M.] is  $0.28 \mu c$ . in the gland of a child. This level can be compared with the I.C.R.P. safe continuous level for adults of  $0.1 \mu c$ . in the gland. [See my comment on the previously quoted I.C.R.P. standards for continuous exposure—A.M.]. The result of the measurements made are under study by the Medical Research Council [!].

The Medical Research Council adds its mite (Annex III, Paragraph 10):

Among workers, the highest level of radio-iodine measured in the thyroid gland was  $0.5 \mu c$ . *This amount of Iodine 131 will cause no harm.* ...

And how do they know that it will cause no harm? Why, because, in the words of the Committee (Annex II, Paragraph 8):

... the I.C.R.P. level for safe continuous and constant iodine activity in the adult gland is  $0.1 \mu c$ . The highest thyroid iodine activity so far measured among the staff is  $0.5 \mu c$ . *Since iodine has a short life some increase over the I.C.R.P. level can properly be made if the dose occurs on a single occasion.*

There we are: There existed no standards for the intake of radio-iodine in milk; "standards" were *arbitrarily* manufactured "for the particular situation" and accepted by the Medical Research Council as "sufficiently correct". Sufficiently correct for what? For allowing the A.E.A. and the Medical Research Council to pretend that no danger existed. And where there was a standard (for iodine activity in the gland), well, it didn't really refer to this "particular situation" and could be ignored. Is more proof required of the assertion I made in my comment, before I had the benefit of these revelations, that standards of safety, where they were not totally ignored, had been arbitrarily lowered?

## 7. The Danger From Strontium.

Here again equivocation reigns supreme.

The Committee (Annex II, Paragraph 9) states:

A survey is also being made among the workers for strontium activity, both Sr 89 and Sr 90. The radio-chemical analysis takes

time and so far the two isotopes of strontium have not been measured separately. However, by making a reasonable partition of the measured activity between the two isotopes, the first 25 results which have been so far obtained show levels which are not one-tenth of the maximum permissible body burden.

From Paragraph 28, we learn :

... Enough results have now been obtained to suggest that there is no Strontium hazard arising from the accident.

A different picture is presented by the Medical Research Council (Annex III, Paragraph 11), which finds the figure of one-tenth much too high :

Measurements of radio-strontium in the urine are available for the 30 workers who were judged to be among the most exposed. From these we have calculated the total amount of radio-strontium taken into the body and concluded that this, for Strontium 89, cannot be more than one hundredth of that *which could be accepted as a sustained level*, and for Strontium 90 it is an even lower proportion of what could be accepted.

More interesting is Paragraph 22 :

... In estimating the hazard from radio-strontium produced during this incident we had also to take into account the Strontium 90 which has been distributed over the world as a result of nuclear weapon tests. We have also taken account of the possible contributions to the total contamination with radio-strontium by emission from the Windscale plant prior to the present incident. We are satisfied that the magnitude of this contribution could be [*sic!*] of no significance to health. Figures were available for the levels in the particular district before the accident took place, and it is evident that, after the accident, *a small but definite rise took place*. Taking all radio-strontium now present, however, irrespective of source, we have come to the conclusion that the highest levels *in locally produced milk* are, both for Strontium 89 and Strontium 90, well below those at which an *appreciable* hazard would arise were such milk to be consumed over a period of years.

However :

But the radio-strontium content of cow's milk is a reflection of the degree of contamination of the grass and consequently a knowledge of the latter allows possible trends in the milk with change of feed or pasture to be foreseen. In nearly all grass samples, the radio-strontium concentration is at reassuring [*!*] levels; but we were somewhat concerned by the values in a few samples from some places in which—perhaps owing to the local meteorological conditions, perhaps to the soil being poor in calcium—the levels were relatively high. *Nevertheless it is clear that there has been, and at present is, no appreciable hazard*; for milk samples from farms in such places show levels of radio-strontium which are little, if any, higher than elsewhere [and when were these samples taken?—A.M.]. Moreover, the types of pasture from which grass with this degree of contamination is obtained are such as would not be grazed consistently save perhaps for a period in the summer. Although it seems [*!*] most unlikely that any further increase in contamination of the grass will now occur, we feel that a close watch needs to be kept on the radio-strontium levels in milk so that ample warning may be obtained of any upward trend. For the present, from our knowledge of the actual levels in milk in such places, we do not feel that any other action is called for.

What are we to make of this? In the first instance, why do the Council refer only to the strontium in *milk*? The danger of strontium in milk is, at most, only the *most immediate danger, and by no means necessarily the greatest*. Then again, all this refers only to cows. Do the males of the species not also eat grass? What happens when human beings eat the calves and bullocks (bones are *boiled* for soup!) that have been contaminated? On this most elementary level, then, the assurances of the Council are not worth the paper they are written on.

But a more sinister fact lies concealed in the expression "no appreciable hazard". And to understand this, we must know a little more about *how* the effects of strontium become appreciable, i.e. manifest themselves.

1. J. Laurents ("Experiment in Annihilation", *Contemporary Issues*, Vol. 5, No. 20 (1954), p. 226, noted:

Among the many recorded cases of chronic radium poisoning ... it is not uncommon to find ... *latent periods of ten and twenty years*. Strontium ... fission products are of comparable toxicity ...

Thus, no hazards from strontium would, in the nature of the case, be *appreciable* a few days after the accident.

In saying that the hazard is not appreciable, are the Medical Research Council presuming to *prophesy* that no-one will suffer from having ingested strontium 90 as a result of the Windscale accident, within the next ten to twenty years?

2. In deciding what is hazardous, it must be remembered that there is sharp disagreement among scientists, some believing that there is no safe dose at all, i.e. that the danger is strictly proportional to the amount ingested; while others accept the notion of a Maximum Permissible Dose below which the danger is so infinitesimal as to be non-existent for all practical purposes, which Maximum Permissible Dose has been laid down by the I.C.R.P. as 100  $\mu\text{Ci}$  lifetime quantity for whole populations. However, the notion of a Maximum Permissible Dose for any man-made radiation, though it is generally used as if it were an absolute (presumably also by the Medical Research Council), is, in reality, nothing of the kind: it is hedged about by so many varied qualifications as to be virtually meaningless *except it be modified by the appropriate qualifications in every single case*. For this one would have to know, for instance, what tissue is in question? What part of the body is involved? What radiation effects one is specifically taking into consideration? What is the intensity of the radiation in question? The correct determination of the particular Maximum Permissible Dose requires to be based in great part upon knowledge of complex biological effects of radiation about which it is generally admitted very little is known. In fact the Maximum Permissible Dose, as laid down, is at best an approximation and compromise based on certain definite, restricted effects alone, in particular, blood effects. It has no relevance at all to, and cannot be used in, general considerations. Yet it is on the basis of such inadmissible general considerations that the Medical Research Council comes to the

conclusion that the "small but definite increase" of strontium observed after the Windscale accident presents no *appreciable* hazard.

Even working on a basis of pure quantity (which tells one very little, since what is important is the *qualitative* effects of any quantity in its chemical, physical and biological *connections*) one wonders how the Medical Research Council arrived at a view so favourable to the A.E.A. In 1955, for instance, figures disclosed for strontium intake included  $14 \mu\mu$  c. in the bodies of sheep in Wales, and *over*  $1 \mu\mu$  c. in those of children. And this was the result of the *incomplete* fall-out of nuclear tests up till then. (Since then there have been two years of fall-out and more explosions, Russian, British and American, so that the quantity will have increased, perhaps considerably.) Yet in relation to the 1955 figures, the more than hundred-fold increase, stated by the Medical Research Council to be necessary before danger point is reached, brings the figures to  $1,400 \mu\mu$  c. for sheep, and over  $100 \mu\mu$  c. for children, i.e. in both cases even the clearly ridiculously optimistic I.C.R.P. danger level is much exceeded.

How much more likely then are the Medical Research Council's views to be grossly inaccurate when one adds to the 1955 figures the quantity of strontium that has since fallen out.

It will be appreciated therefore that, even on the most optimistic basis (the existence of any Maximum Permissible Dose), there is no ground for the Medical Research Council's comforting conclusions; much less, if we take, as we must when the health and well-being of large numbers of people and their environment are in question, the most pessimistic basis, the proportional one. In this case we must flatly state: *Any* addition of strontium represents an appreciable hazard, *merely in being an addition*.

### 8. The Danger From Caesium 137.

Here once more the Committee and the Medical Research Council behave with unpardonable levity.

The Committee (Annex II) write:

(Paragraph 10.) The evidence so far on radioactive caesium is also satisfactory.

(Paragraph 28.) ... There is no hazard arising from radioactive caesium.

The Medical Research Council (Annex III) observe:

(Paragraph 12.) The evidence now available for radioactive caesium shows that contamination amounted to only a very small fraction of the maximum acceptable level.

What are the facts relative to caesium 137 (half-life 33 years)? It emits gamma rays; it is indifferently distributed throughout the body, showing no preference for any tissue; and, it is not retained in the body (biological half-life, about 17 days). Despite this, how-

ever, the level of caesium in the human body is increasing steadily by roughly 2 per cent per year. And, most important, it poses a genetic risk.

Now as far as genetic damage is concerned, there exists *no permissible dose* (what the Medical Research Council call "maximum acceptable level") *at all*. Radiation is, from the genetic point of view, unconditionally bad. Any addition to the natural level, to which the human and all other species have become adjusted, is dangerous. This is surely known to the Medical Research Council, as it is a matter of common knowledge among well-informed laymen. Upon what then does the Council base its conclusion, once more so providentially favourable to the A.E.A.? Would it be upon the "safety standards imposed by the United Kingdom Atomic Energy Authority as a matter of urgency", "as a result of deliberation" between Dr. McLean, Dr. Marley and Mr. Farmer?

### 9. The "Wigner Release."

It is important to examine this matter because of its bearing upon the programme of nuclear power stations the Government has embarked upon.

The Committee remark about it as follows (Annex I):

(Paragraph 6.) The phenomenon of the storage of energy in graphite due to neutron bombardment (the so-called Wigner energy) *has been known for some time* but when the Windscale pile was designed and built knowledge was scanty [it was, we remember, a "step in the dark"!—A.M.]. That such energy could be released spontaneously or by annealing was not clear at that time [nevertheless, though Lord knows how, "the (!) risks" had been "recognised"!—A.M.].

(Paragraph 7.) A *spontaneous* release of Wigner energy occurred in the Windscale No. 1 pile in September, 1952, whilst the pile was shut down. This led to a rise of temperature of the graphite but the rise was not dangerous and there were no harmful effects. *As a result of the study of this incident, a procedure was instituted for controlling release of Wigner energy; and eight such releases had been carried out by the end of 1956 in Pile No. 1. . . .*

(Paragraph 8.) It has always been found difficult to release energy in all the graphite of the pile. . . .

The suggestion, at least, is that, whereas when the Windscale pile was built the phenomenon was not, or hardly, known, now it is so well-known that it is controllable without risk of accident. The Committee is greatly concerned (Annex V) to show that in the new "improved" piles, such as at Calder Hall and the new reactors being built for the C.E.A., "when a Wigner release becomes necessary, *it will not present any hazards because it can be conducted under fully controlled conditions . . .*" (Paragraph 3.)

The Committee then give various technical reasons why this should be the case. In themselves they mean nothing to a layman who is not in a position to determine whether they will, taken together, produce the required "fully controlled conditions".

A layman is, however, already suspicious when, in the very next paragraph (4), he reads:

As stated above the graphite in Calder Hall is being periodically checked for storage of Wigner energy and accelerated tests of stored energy are being carried out in the Harwell research reactor DIDO [*Delenda est Cartago!*—A.M.]. *If these and other tests should show any new factors, there is ample [sic!] time [after another accident?—A.M.] to introduce additional safeguards, e.g. by filling the reactor circuit with an inert gas during the Wigner releases.*

What then becomes of the presently claimed “fully controlled conditions”, since these are admitted (by implication) to be based on incomplete knowledge?

At any rate, though definite proof that the A.E.A. (and the C.E.A.) are once more “recognising risks” in the manner in which these were recognised before cannot be given, note must be taken of the following interesting remarks in *The New Scientist* (24th October, 1957):

There is a growing impression that the fire in Windscale's No. 1 plutonium reactor was caused by *an obscure and none-too-well understood reaction known as a “Wigner release”*. It is a complex phenomenon, based on the reaction of graphite in a reactor over the years to constant exposure to intense radioactivity and bombardment by neutrons released during the fission process. . . .

A good deal of attention has been given in recent months to this accumulation of energy in graphite moderators. . . . If the reactor is heated to something above its normal operating temperatures, the energy is released and can be drawn off the plant in the form of heat by the coolant gases. Plant engineers have already made provision for “de-energising” the reactors of atomic power stations in this way.

They believe [!] that roughly every five years it will be necessary to shut down the reactor completely, and probably [!] to draw out a certain amount of its fuel. The cooling gas would then be heated up to something substantially above the temperatures at which it usually circulates and pumped in this condition through the shut-down reactors. *If calculations are correct [observe the appearance of the “fully controlled conditions”!—A.M.] this should [!] remove the accumulated energy from the graphite. The engineers are, however, having some difficulty in getting precise figures about the “Wigner release” largely because very few scientists know much about it. . . .*

But—and this is a most important but—once sufficient energy has built up in the graphite [about which “precise figures” are difficult to come by!—A.M.] *its release into the reactor could also be accidentally [sic!] triggered off by much the same means*. A local rise in the temperature of the fuel, the cooling gas or the graphite itself could start a cumulative release of energy in the form of heat *that would be very difficult to bring under control*. If this is the explanation of what happened at Windscale, it is a fact that obviously deserves the widest possible circulation. The Windscale plants were designed years before this phenomenon had ever been heard of; they use a primitive system of open-cycle air cooling that has long since been abandoned even in plutonium plants for the more sophisticated device of generating electricity from the waste heat.

*This does not alter the fact that the “Wigner release” is a specific feature of graphite-moderated thermal reactors, and these are the type that form the backbone of the country's atomic power programme. . . .*

If any comment is required, it is this: Once again, the Report is shown to be grossly misleading and inaccurate. The facts are that the “Wigner release” is not understood, that it does present a danger, and that the A.E.A. and the C.E.A. are (for reasons which have



already been made clear in my article) in all probability *consciously* taking risks which endanger the health, and (after a sufficient number of accidents) perhaps the very existence, of the population of this country.

### 10. Conclusion.

The examination of the Report, even to the extent that it is open to examination by a layman, reveals that it is a specious document that takes advantage of the general ignorance of the public concerning radioactivity and its dangers. It cleverly uses technical terms that for the generality have no meaning; makes assumptions which not many people have the time or ability to question closely; puts forward claims which upon detailed investigation turn out to be palpably false; and in its short compass—a mere 27 pages—is full of contradictions which only painstaking analysis can bring to light.

I have purposely refrained from dealing with any but what seemed to me to be the most important aspects. Thus, I have not referred to the fact that the physicist in charge of the pile during the time of the accident “had no Pile Operating Manual, with special sections on Wigner release, to help him, nor had he had the benefit of sufficiently detailed instructions”, though it is, of itself, a most damning example of the criminal irresponsibility of the A.E.A. officials in charge at Windscale, as indeed are the disclosures that the instrumentation was faulty so that they could not even determine, until it was too late, that an accident, disastrous enough, had taken place. The most they were able to do was to prevent it from becoming an unmitigated catastrophe—and it is for this that the A.E.A. and the Medical Research Council *praise* them in the Report!

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### A Nobel Word From a Prize-Winner

**Albert Camus:** Every revolutionary ends as an oppressor or a heretic. Revolt and revolution both wind up at the same crossroads: the police or folly. (*The Evening Standard*, October 21, 1957.)

F. Lohenbill.

## LITVINOV'S DIARY

The diary of Maxim Litvinov was recently published in London by André Deutsch under the title *Notes For a Journal*. The manuscript came from Russian emigrés in Paris who, again, are said to have obtained it from contacts in Stockholm. Alexandra Kollontai, the former Russian ambassador in Stockholm, who in the twenties was also well-known in German left-opposition circles as a member of the "workers' opposition", apparently looked after the manuscript for Litvinov and, when she returned to Russia, left it behind with the instruction that it should be published after Litvinov's death.

The publishers charged Professor Carr, the British specialist in Russian history, with the task of assessing the authenticity of the manuscript. Notwithstanding that he found some inaccuracies, and despite the fact that the manuscript had passed through many hands and had probably been "worked over", Professor Carr opines—and we agree with this opinion—that this in no way detracts from the value of the book. Carr's view is that, even were one to consider the notes merely as a poetic fiction, they nevertheless form a work of considerable insight and imaginative power and give proof of great literary ability.

The diary consists of notes jotted down in telegram style without any "tendency". They are neither Stalinist nor anti-Stalinist, but compose a picture of how the Stalin epoch of the twenties and thirties was reflected in Soviet ruling circles. Maxim Litvinov is, however, no ordinary every-day career bureaucrat. The former pupil and follower of Lenin, the old revolutionary who for many years of his life, in Russia and in emigration, worked for the revolution, surely did not find it easy to adapt himself to Stalinist reality so diametrically opposed to earlier hopes and endeavours. From this arise his frequent lamentations which finally culminate in the sigh that it would assuredly have been better for him not to have left England. Yet Litvinov suffered his fate. He lacked the fighting spirit and understanding to be more than a passive victim of the increasingly more oppressive social conditions.

How indeed should Litvinov have had theoretical insight into, and theoretical understanding of, the historical tragedy which was being enacted before his eyes, when even the leading theoreticians of the Bolshevik Party, despite presentiments of genius, could not fully understand the changes that had taken place in Russia? Even Trotsky, the inexorable critic of the new privileged ruling stratum in the "Soviet Union", to the day of his death saw in Russia, as is

well known, a "degenerated Workers' State", which in his terminology signifies a form of society superior to capitalism.

It is to Litvinov's advantage that he never was a theoretician—in consequence "theoretical problems" do not trouble him. The struggle between Stalin and the opposition is for him essentially a personal animosity between Stalin and Trotsky, two talented leaders of the Revolution, and he laments this animosity as a tragedy for Russia and the Party. Trotsky's and Joffe's warnings about Stalin, with which the notes begin, he considers morbid and feverish fantasies. Much later only, as a result of his own bitter experiences, did he become conscious of the truth of the words, "this man will waste no time turning into a Borgia, after having already become a Machiavelli".

Since Litvinov stood aloof from the theoretical problems of the Revolution, it was easier for him to remain "on the level of facts". He carefully avoids straying into forbidden territory either through criticism and opposition, or through the expression of opinions which might displease Stalin. The crafty Stalin quickly understood that Litvinov, by no means untalented, familiar with Western life and customs, and bathed in the glory of the revolutionary old guard, could be useful to him as a tool in the foreign ministry. The hazard of circumstances had created bonds between these two men in other respects so different. They had both been involved in the affair of the bank robbery in Tiflis, and Stalin, in the course of one of his rare visits abroad, had spent two weeks with Litvinov. Litvinov notes how he and Stalin exchanged reminiscences of this common experience and how tears came into his eyes when Stalin addressed him by his old nickname of "Papasha".

The person of Stalin exercised over Litvinov a singular power of attraction. To the very last he retained an admiration for Stalin that amounted almost to a perversion, notwithstanding some bitter experiences and humiliations. In the sphere consciously created by Stalin in which the most untalented mediocrity and an absolutely corpse-like obedience were alone tolerated, the sly, energetic, unscrupulous and scheming Georgian stood out as the only person of consequence. Litvinov admired him as a personality of substance. He early saw him as the "coming" statesman and the new dictator of Russia, and he certainly had a presentiment of coming events when he wrote that Stalin, in contrast to Lenin, would rule not with the heart but with an iron hand. Yet Litvinov was never able completely to grasp the "greatness" of this evil genius. Time and again the unscrupulous acts of Stalin surprised him. Time and again he asks himself the question anew: "How could he have dared? How was it possible?" He is alarmed about the banishment of Trotsky. He cannot conceive that the greatest and most talented leader of the revolution after Lenin is being dragged from his house by the police, gesticulating and with a torrent of protests, but without doing anything against it; whereas Stalin had with certainty reckoned on violent opposition and had, should this have come

about, prepared a postponement of the exile. Litvinov recalled to mind a remark of Joffe's about Trotsky's indecision and "Hamletism". Trotsky's "Hamletism" however contrasted with the joyfully active spirit of enterprise of Koba. Litvinov always admired in Stalin the man of action, even when these actions went against the grain. He was sentimentally attached to his revolutionary past and followed with alarm, astonishment and the greatest inner agitation the process whereby one old Bolshevik after another was humbled, tormented, corrupted, persecuted, imprisoned or simply put to death by Stalin.

Even so he was shaken to the core when he heard of the death sentence against Zinoviev and Kamenev. The otherwise so careful Litvinov could not control himself even in the presence of witnesses and burst into tears. Koba appeared to him a monster of power and strength. For Litvinov the depth and massiveness of the reactionary development of Russia are personified by Stalin.

He, Stalin, believes it possible to control all classes and nations by force—brutal, physical force. His recipe is, physically to destroy the leaders and then to deceive the masses which, through lack of leadership, are in an amorphous condition. How will he succeed? Will he be able to rule the groups which he himself creates in the course of his political manoeuvres? According to our old Marxist ideas the thing cannot be done. . . . We shall see. . . .

Litvinov had already discarded many old "Marxist ideas" as being childish dreams. Socialism, Communism or the interests of the working class are for him but fine phrases with which one stuffs young Communists; but for which he, as a "statesman", has no place. He is always amazed by the fact that Stalin makes use of socialist jargon and, in all his political undertakings, generally keeps an eye on the reaction of the left-opposition and workers' movement. This play with revolutionary phrases often angered Litvinov when he was foreign minister, particularly in those countries with which it was, according to him, necessary to reach a quick understanding. In this respect Litvinov, the *real*-politician, felt himself the superior even of the cynical and unscrupulous Koba. At that Litvinov still did not understand that Stalin was nevertheless the more far-seeing and more clever *real*-politician. Stalin knew of what irreplaceable value the glory of the victorious October revolution was to him for the maintenance and consolidation of his position. The Western world was only too willing to seize hold of the catchwords Stalin had thrown to it. This also Litvinov does not understand. At the time of the Moscow trials, he makes the following entry in his diary:

It is astounding to read in the foreign press the most fantastic explanations. . . . They speak of Raskolnikov . . . of Dostoevsky . . . of the Russian character and its tendency to repentance. . . . If Zakovsky [a leading official in the NKVD] had a free hand in any other country whatsoever, the result would be the same. . . .

The explanation of the confessions is assuredly as simple as Litvinov here states it. The West however—and this Litvinov was unable to understand—wished to *conceal* the truth about Russia.

The preservation of the legend about "Bolshevist" Russia made it possible to mislead and compromise the strong anti-capitalist movements in the Western countries. Plausible explanations which corresponded with the facts, the kind that Litvinov sought, were politically inopportune. In the West, exactly as in Russia, it was necessary to distort the truth and give it theoretical frills in order to make it correspond with political requirements. The "disappointed" Left, which had already done "pioneering" work for Nazism on the theme of the collective guilt of the German people, did not find it difficult ideologically to obscure and misrepresent the real events in Russia. The confessions of Stalin's victims which had been extorted by force were remodelled into confessions freely made as a result of "bolshevist" party discipline. Pseudo-psychological explanations about the Russian soul and the Bolshevist-party soul had to take the place of political insights and did not fail in their purpose of being useful both to Stalin and to the rulers of the West through the decimation of all progressive movements.

Litvinov was unable to see through this ideological game in which East and West acted in unison. This notwithstanding, he surprises us in his notes with astonishing views about the parallel line of development manifested by Russian capitalism and capitalism in western countries. Already in 1931 Litvinov had come to the view, repeatedly put forward in the pages of this periodical, that there exists no fundamental difference between the two economic systems in East and West. This is so important a recognition that it will be rewarding to dwell a little longer on it. Litvinov was considering the thesis of the Russian economist Varga to the effect that capitalism would, in the coming crisis, "choke like a rat in a blocked-up hole", and he notes on this score, *inter alia*:

However should there be no war, capitalism is certainly not yet condemned to disappear. Our situation was even more catastrophic; but we managed to keep ourselves going. It was certainly not our Socialism that enabled us to do this, as Koba would assert. . . . What actually saved us was our planned economy. This the capitalist countries have also long since understood. Up to now they have not yet determined to control their economic system; but the time will soon come when they will be forced to do so."

This prophetic entry of the year 1931 becomes even clearer when we put it side by side with his entries relating to a conversation he had with the economist Vosnessenski:

He does not believe that capitalism will of necessity collapse in a world crisis and revolution, which, as Molotov tries to prove, are to follow the crisis. "I believe that capitalism will disappear", he said. "Hence I am a member of the Communist Party. I do not, however, believe that it will vanish in accordance with the prophecies of Karl Marx. Our revolution has shown the beneficial consequences of planned economy on a national scale. When economic planning becomes effective on an international scale, then the nineteenth century capitalism studied by Marx will disappear without a revolution".

Today, 25 years after these notes of Litvinov's, economic planning has become daily practice in the capitalist countries of the

West also. It is of course characteristic that Litvinov and Vosnesenski see no difference between the *socialist* planned economy for which Marx strove and the planned system in Russia also predicted for the rest of the world. Capitalist planning, of Stalinist or Western coinage, is however only the rationalisation of capitalist contradictions through planning. Backward Russia did not accidentally become the pacemaker of this "modern" economic tendency, which sacrifices the well-being of humanity to the fetish of production for the sake of production, and produces not useful goods for the satisfaction of people's needs, but A- and H-Bombs.

Litvinov the statesman, Litvinov the man without illusions, who has lost every shred of faith in the masses, contradicts Koba even when the latter correctly attributes the victory in the civil war to the socialist hopes of the masses. It is however this very "realistic" throwing aside of all "illusions" that enabled Litvinov already in 1931 to see the Russian economic system in its unvarnished reality and to acknowledge that there existed a parallel between its development and that of all other capitalist countries.

On the basis of the notes, a special chapter could be written on the anti-semitism promoted in Russia by Stalin and the apparatus. Litvinov had to suffer many humiliations in this respect and he frequently returns to this question in his notes.

There is nothing in Litvinov's diary that was not already known from the literature about Russia. Furthermore one will look in vain for sensational exposures about foreign policy. So long as it pleased Stalin, Litvinov could go about hawking "collective security", and the more enamoured he became of his own ideas, the more easily could Stalin, behind the back of his Foreign Minister, follow his own aims which finally resulted in the Ribbentrop-Molotov pact.

Though the diary yields nothing "new", the "old stuff" from Litvinov's pen about ex-bolsheviks and Soviet bureaucrats "against their will", is yet rich in disclosures and is original.

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S. Derbal.

## ALGERIA BEFORE THE WORLD.

For three years Algeria has been fighting for its liberty and emancipation. The Algerian people with one accord have answered with arms the 130 years of savage repression, humiliation and enslavement brought on without scruple by French colonialism.

At the present moment, the Algerian is the most bloody of all problems and in sheer number of crimes, executions and tortures



surpasses the Hitler epoch. Since 1939, the French people have not ceased shedding their blood in defence of capitalist interests. Indochina experienced seven years of war, and, with the return of peace, Vietnam found itself partitioned and given over to foreign imperialisms. Subsequently war kindled North Africa. So-called independence has come to Tunisia and Morocco; but Algeria remains for the time being a vast concentration camp guarded over by 600,000 soldiers and 600,000 armed French civilians.

All over the world interest is focused on the launching of the sputnik and on intercontinental ballistic missiles. The cry of an oppressed people goes unnoticed. The barbarous butchery relentlessly continues on Algerian soil.

The "pacification" of the sinister fascist Lacoste day by day adds to the tragedy of this bloody battle. The governments of Mollet and of his successors continue to keep in being an obsolete régime, that of colonialism in the twentieth century. World opinion is duped by the specious arguments of French fascism. At UNO a coalition of capitalist countries has the preponderant voice in discussions on colonial questions. Votes unfavourable to Algeria come especially from the Anglo-Saxon bloc. It must unfortunately be asserted that the peoples are involuntarily the accomplices of the misdeeds of their governments. We pay tribute to the parties of the Left in Britain for having come out in favour of the independence of our country.\* The arbitrary arrest of the five leaders of the Front of National Liberation and their imprisonment have only succeeded in making more unlikely\*\* the ending of hostilities.

In the French Assembly there is being drawn up an outline law with the single object of deceiving world opinion before the debate on the Algerian question at UNO.

This outline law, rejected by the Algerian people, is a mere semblance of truth, i.e. a misleading shadow without substance. One must be feeble-minded to fall into the trap of such hypocrisy.

One thing alone can serve to put an end to this war of extermination, the pure and simple recognition of the independence of the Algerian people. The blood of French soldiers is being shed for an unjust cause. The Algerian people will know how to recognise those who steadfastly remain a symbol of proletarian solidarity. Once more we call to the British people; once more we repeat that this war is not an outbreak of fanaticism, not a holy war, nor a racist revolt—it is the answer to 130 years of barbarism and atrocity; in a word, a revolution of a people which wishes to live in freedom and independence.

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\* We sincerely trust that this "support" for Algerian independence by the Labour Party (and other Left parties) will not be mistaken for support of substance. The Labour Party's record in colonial questions is one of consistent betrayal of national movements.—*Editors.*

\*\* A word is missing in the manuscript; "unlikely" is a conjecture to the accuracy of which the context lends a considerable degree of probability.—*Editors.*

Alan Dutscher.

## SOCIAL LIFE IN AMERICA.

### I

There is a minority report to be made of the American scene—a report which, despite the constant barrage of facts and figures “proving” the contrary, states candidly that our domestic scene is something less than an idyllic, paradisiacal “triumph in technicolor”. There is a large fund of social unrest, of unhappiness in America, and if we are more or less blind to this situation that is only because the manifestations are somewhat unfamiliar. The problems involved may be indicated very broadly as follows:

There is too much surface “happiness” in America today, too much real unhappiness; our standard of living is always rising, our leisure ever-increasing, we are forever “saving time”—still we never seem to have enough goods or time; we “save time” in order to “kill time” to use two expressions characteristic of our age, and since time is only a measure of life, the phrase “kill time” once again proves that language has a wisdom of its own, for time killed is man killed; people are “able” to, and do, buy more commodities than they ever bought before, yet the itch for possession only grows worse instead of being sated; the rising standard of living, which we were brought up to regard as the touchstone of personal happiness and of the successful social system, often appears as a demonic force which will not let us rest, which forces us somehow to buy, buy, buy: After the car is bought, the house “must” be bought, after the house is bought, the giant refrigerator “must” be bought, then the combination washer-dryer, the “hi-fi” set, the backyard swim pool, and just about that time we are ready for a new car again, or a second car, and a new house for the new “additions”; we laugh at “keeping up with the Joneses”, yet that is all that many of us ever really do; the “welfare” state has given us more “social security” than we ever had before, yet if there is one thing that haunts us in the midst of our plenty it is insecurity. And it is in fact statism which generates most of our fear, for it is the state which enforces conformity, wages, war, etc.; we chafe at the bureaucratization of modern life, but more and more of us become bureaucrats; we mutter about high taxes and have little conviction that tax money is doing us or anyone else much good, but we either pay our taxes or find respectable ways to cheat. Rarely is taxation considered as a *social question*. And despite recurrent “economy drives” (always based on the most picayune considerations) taxes continue to grow; we would like the whole damn machine to stop for a while, so that we could look around, compare, consider, weigh,

perhaps start on a different tack altogether. Yet despite "increased leisure time" individuals rarely have a chance to put on the brakes before it is too late.

## II

To some, all of the aforementioned complaints will appear as simply another manifestation of the infinite human capacity for griping, for confusing individual shortcomings with real social problems. But there is too broad a consensus about these matters for them to be merely personal irritations. This is the first illustration of what is meant by the previous statement that social unrest manifests itself in unfamiliar ways. For it is interesting that contemporary social grievances often appear less objective than they ever did before. In the '30's, for example, the grievances were "classical", tangible, somehow more "real" than they seem to-day. Hence the social and political demands of the sufferers were no less tangible: more jobs, better working conditions, higher pay, less working hours, more job security. Today the grievances frequently strike one as petty, intangible, remote, irremediable, a matter of *individual* aberration, and the general insecurity appears as mere *psychic* insecurity (the corresponding remedy being "positive thinking", tranquilizer drugs, etc.). This is in part due to the bureaucratization of modern life, which makes it unclear who or what is to blame for any given social irritation. On whom is one to blame higher taxes, for example?—there are so many social agencies and institutions involved. Ultimately, the official line is either to blame the Russians who "force" us to spend billions on defence (and how convenient this is, for one can "of course" do nothing about the Russians), or to conclude that all taxes are justified and there is something wrong with those who complain about them (probably, they should be psycho-analyzed).

After all, the question is sometimes asked, how can one complain about anything? Compare our lot, as individuals, with what it was in the '30's: automatic pay raises, diminished work week, "pleasant" working conditions ("soft" music piped in all day long, air conditioning, etc.), increased job security—and all seemingly without our having to lift a finger to obtain them, for, compared to the '30's, we have no real labor-capital battles any longer.

Things, then, are always getting better. So it seems. In actuality, however, quite a few aspects of this picture are fundamentally askew. In the first place, the very fact that we no longer have to struggle for "better" working conditions is not an unmitigated blessing. In this sphere, as in so many others, things can become too easy. The present situation creates a basic irresponsibility; instead of doing for ourselves, we are forced to depend on bureaucratic ukase, on the secret bargaining between top labor and top management. And when "our" demands are "satisfied", rarely are they satisfied the way we would have them be: If our wage increases are automatic, tied to the rising price level, then we are

never really ahead. But much more is involved. An unusually interesting letter to the Editor of the *New York Times* appeared on July 2, 1957. The author, Alfred Baker Lewis, wrote, concerning the recent rise in the price of steel:

Several things seem to me disturbing about the steel companies' price increases.

First, the companies follow each other so quickly that the price rise is practically simultaneous. Although the steel companies are not operating at capacity, there is no attempt made to get more business by keeping prices lower than their competitors.

Second, there is evidence that, in previous price rises, the companies raised prices by a percentage equal to the percentage increase in wage costs. But direct wage costs are somewhat less than 40% of the total costs, so that a price rise that would represent a percentage increase only 40% as great as the percentage increase in wages would cover the increase in their direct labor costs. Either the companies were seeking to rouse antagonism against labor by a greater increase in prices than the labor gains are really responsible for, or they were trying to increase their profits even more than they were making.<sup>1</sup> It is true that this time the price rise was a more modest percentage increase than the percentage increase in pay, but this has not been the usual pattern heretofore.

Even more important is the argument given that the price rise is needed to enable the companies to expand their facilities out of increased earnings. What this means is that the consumers of steel are being asked to finance an increase in the capital equipment by paying higher prices, having financed the addition to capital equipment of the steel companies. But having financed the addition to capital equipment by paying higher prices, the buyers of steel do not own their share of the steel companies' capital.

The consumers pay for the increase in capital, but the stockholders own it. This is certainly neither just nor in accordance with classical economic theory. If the steel companies need more capital they should ask their stockholders and the public to buy new stock or new bond issues. Instead of that the consumers pay for the increased capital but get no new securities of the steel company in return.

It is "interesting" that labor unions make very little effort to publicize this kind of information. Apparently, just so long as union members get their salary increases, there is little more to be said. The mere fact that the *general* public may pay  $2\frac{1}{2}$  times the price of the increase certainly shouldn't disturb the sleep of a labor bureaucrat. It is time that the very notion of the pay raise, what it means, what it is intended to accomplish and what it actually does accomplish, be looked at anew. One thing is certain: Whether or not union members derive actual benefit from their wage increases, the latter are no sure indicator of increased *general* prosperity.

Or take the matter of the lessened number of working hours. Examined *concretely*, this proud boast of modern industry also seems to be based on much fantasy. Actually, the 40 hour week is vanishing as reality and ideal from the American scene as more and more men work at a second job—either a week-end job or an evening job or both. There are also an increasing number of men

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<sup>1</sup> Needless to say the second assumption is the only one that makes sense.

who work on three jobs at once. Even their vacation time is exploited by some as an opportunity—to make more money, e.g., the great number who do military reserve duty simply in order to earn extra cash. But this only begins the matter. Perhaps even more decisive, is the new phenomenon of the working wife and/or mother. This has not been sufficiently commented upon by sociologists. Whether the second job is held by the husband or the wife, total family time devoted to labor is augmented and total time devoted to leisure decreases. What then becomes of the oft-parroted contention that Americans are burdened with vast quantities of leisure? Those who know intimately families in which both husbands and wives work know what a “rat race” such a situation usually creates—meals that are never prepared when they are wanted or needed, homes that are never clean, constant fatigue, the lack of time for everything from social to sexual intercourse. . . .

There is more: Lewis Mumford has somewhere written that considering how much time is wasted by the working man in travelling to and from his job, the work week today is perhaps longer than it was in the Middle Ages when the place of residence was the place of work. There are other less formal but very real ways in which the working week exceeds the much-talked-of 40 hours. For the executive, for example, there is the enormous amount of “free” time spent in enforced “socializing” with the boss, competitors, and clients plus another great block of time lost in worrying about the job on one’s “leisure” time, boning up for it, etc. Unfortunately, statistics, which are often very abstract, very pale reflections of reality, tell us little about these augmentations of the work week. One is reminded of Sydney Smith’s remark: “Don’t tell me of facts, I never believe facts; you know Canning said nothing was so fallacious as facts, except figures.”

### III

It would appear therefore that we have social problems, though they are somewhat different from what they once were. One difference, already noted, consists in the difficulty of concretizing grievances and putting our finger on the cause of the trouble.<sup>2</sup> Yet another difference is that instead of suffering from social deficiencies we seem to suffer from diseases of excess. The very apt title of Russell Lynes’s provocative book, *A Surfeit of Honey*, already tells much. As odd as it may seem, we are less the beneficiaries of a rising standard of living than its victims. Stratified societies have social boundaries that are apparent. This means that people are kept in their places—a notion uncongenial to us. On the other hand, it also means that since beyond a certain point in the social system there is no place to go, people of all classes can “take it easy”, or easier, can relax a bit. Sociologists like C. Wright Mills tell us that,

<sup>2</sup> Not the least reason for this is the decline of independent journals and journalists willing to “muckrake”.

in reality, our social order is far more stratified than appears on the surface. Nonetheless, because the stratification is not apparent, many of us draw the conclusion that "the sky is the limit". Thus, there is very little relaxing and very much pushing and climbing. This is no defence of social stratification; it is, however, a defence of rational limits on personal ambition.

How does one determine rational limits? Which needs (for commodities, etc.) are genuine, which artificial? There is no pat answer, no magic formula. The secret is balance. But balance is a peculiar "secret"—one that must be learned again and again, for it is a very concrete thing. However, none of us are wholly independent of our environment, and that environment is hardly conducive to balance. Thus, an enormous part of our commercial effort—advertising—is designed to inculcate an *insatiable* hunger for possession, useful or useless as the case may be, in the general population. The notion of unlimited need is insane and must lead, in practice, to collective and individual insanity. The insatiable itch for possession is as pathological as insatiable hunger or thirst. It results in a general psychic rootlessness, restlessness, and insecurity to which everyone is more or less subject.

Nor is such rootlessness the desideratum of progress, as some would have it. For progress presupposes a goal however relative toward which one is progressing. The "aim" of the whole economic apparatus today is—aimlessness; production and consumption not to satisfy human need, but for their own sake. There is no relaxing, no point to the story of modern life, and that is why the story often seems so senseless.

Then the question (and a very peculiar question it must appear to many) to which we must address ourselves is: Is an ever-rising standard of living a good thing, or is it perhaps symptomatic of social pathology? Has anyone ever proven that expansion *as such* is positive? There is another question that we will have to ask soon: Is eternal expansion *necessary* to keep our economy going? But for the moment let us consider the general and usually unquestioned assumption that necessary or not expansion is a good thing.

One result of the "surfeit of honey" is a terrible vulgarity. It is perhaps not generally realized that poor taste is a phenomenon *par excellence* of excess rather than of deficiency, of the haves rather than of the have-nots. The latter have very little choice in their possessions. The former, however, have the means to gratify almost any whim. Moreover, it is the haves who create the style that filters down to become the general pattern. The "style of life" of the haves of any period is a well-nigh infallible index to their reasonableness and thus to the reasonableness of the social order they head.

To be sure, "conspicuous consumption" has been with us a long time. What is new is that seemingly our whole middle-class society is consumed by the itch for possession—of the tasteless, the useless, the big, the shiny, the new, the loud, the exaggerated. Yesterday's newspaper carried an advertisement for "perfumed ink . . . that



leaves an air of delicate fragrance on your correspondence". The day before an ad. appeared reading (whether tongue-in-cheek or not is beside the point): "Buy a gold toothpick for the man who has everything". The man who has everything! One can just imagine this man—surrounded by appliances, gadgets, knickknacks—bored, restless, fatigued, lazy, frightened. The one-sided urge to possess begins as vulgarity and ends as mania. It is the complete antithesis of the human point of view that it is not what a man has which is important but what he is.

The tastelessness extends beyond the realm of material possession to that of spiritual encumbrance. People now supposedly have the money to travel, and travel, one would imagine, is an educational, broadening experience. One would imagine . . . We do not say that the scenic attraction described below is a typical vacation paradise of our nouveaux riches, nevertheless the mere fact that the staid *New York Times* devoted a long article to it is indicative of the kind of humorless, tasteless, fundamentally uncritical approach to things so current today. Moreover, it evinces a little of the spiritual counterpart of the urge for material accumulation—the drive to "see everything".<sup>3</sup>

The article referred to appeared in the Travel Section of *The New York Times* of 6/9/57 and was written by reporter Gladwin Hill. The headline read: "Watching the bombs go off—Tourists can see blasts in Nevada test area this summer." The report read, in part, as follows:

... for the first time, the A.E.C. has released a partial schedule, so that tourists interested in seeing a nuclear explosion can adjust itineraries accordingly. . . . The best base for bomb-viewing expeditions is Las Vegas which has a couple of hundred motels and hotels of all types, with fairly standard rates.

A perennial question from people who do not like pre-dawn expeditions is whether the explosions can be seen from Las Vegas, sixty-five miles away. The answer is that sometimes enough of a flash is visible to permit a person to say that he has "seen an atomic bomb". But it is not the same as viewing one from relatively close range, which generally is a breath-taking experience.

Talk of Nero fiddling while Rome burned. . . . We seem to have an unlimited capacity for banalizing, trivializing (and making money from) the most horrible phenomena. Most moderns claim they cannot understand the insensitivity of a Roman public that could view the spectacle of Christians thrown to lions, or the callousness of an 18th century public that would turn out for public hangings. But what is one to say of contemporary insensitivity which would make a tourist attraction of nuclear testing with its implications of racial destruction? It is perhaps worthwhile to recall the obvious fact that restraint and gentleness are not part of man's germ plasm. They are cultivated products of civilization. When destruction is made into a public spectacle, becomes a commonplace, that cultivation is endangered.

<sup>3</sup> The most adequate general counterpart is the Faustian urge to "know everything"—as exaggerated and inhuman an ideal as one could wish for.

It has been stated that the characteristic social disease is one of excess. We may borrow a suggestive analogy from medicine: Uncontrolled tissue growth is at best tumorous, at worst cancerous. The same is true of uncontrolled growth of the social organism. Broadly speaking, there is in fact a "curious" parallel between the characteristic social and biological pathologies of any society, of classes within any society. In "backward" civilizations or in backward sections of more "advanced" civilizations the social and biological diseases<sup>4</sup> are those identified with deficiency, i.e., mass starvation, or the ills that result from inadequate nutrition and shelter, such as tuberculosis. "Advanced" societies, on the other hand, exhibit the pathologies germane to superfluity: excess fat, excess tissue growth, nervous over-stimulation, etc.

However true in detail the above may be, it is interesting to reflect that if we have over-shot the mark, the results are very much the same as if we had never reached it.

#### IV

In considering the social effects of the rising standard of living, we have, perhaps, been taking the latter too much for granted. To be sure more goods and services *are* available to more people today in America than ever before, but not because they have become cheaper. On the contrary. They are available largely because of the extension of mass credit. It is obvious that easy credit terms foster only the illusion of cheapness and availability, while actually increasing the price of all commodities.

There is still another basic reason why commodities that appear cheap are not really so and that is their built-in obsolescence. Consider so useful and commonplace an item as shoes. Virtually everyone in this country now wears shoes. This certainly was not the case 30 years ago. So far, so good. Unfortunately, the matter does not rest there for not only does everyone wear shoes, but shoes wear everyone—out. One seems to be continually buying them: either they never fit, or there are style changes, or they wear out very soon. This is particularly true of women's shoes: the average female supposedly purchases six pairs a year. Multiply the original six dollar purchase price, which is undoubtedly cheap, six times and the result is not so very cheap. Style changes somehow shade unobtrusively into shoddy workmanship; function follows form in many of our artefacts. Women's high-heeled shoes, with their turned-out heels is one case in point; nylon stockings, which are apparently designed to run are another; women's handbags, with the clasps that fail to function long before the bag is half worn is yet another. Continual replacement raises the cost of the most commonplace items, yet the quality of commodities is not easily or often measured in cost-of-living computations.

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<sup>4</sup> We are speaking of disease in the broadest possible sense, i.e. as any condition in which health is impaired.

There is still another unmeasured factor: Quite a few of the commodities that are part of the rising standard are not very useful to many of their purchasers and may even be pernicious to them as well as to non-purchasers. The automobile is an example of this "shortcoming" and of other generally glossed-over deficiencies of the pretty economic picture. Supposedly we are now on the road to fulfilling that great "utopian" dream of "two cars in every American garage". Does this mean that the auto is getting cheaper? It does not. The price, despite temporary regressions, is steadily rising. Nor is the American auto a well-made, durable commodity: the fashion is to trade in *every* year. The car is, like so many other things, big, brassy, flashy—but construction is poor, lasting quality poor, style changes many, and upkeep cost enormous. The old joke about the fellow who was supporting a car instead of a wife has as much point as ever, except that that fellow today is probably supporting both plus a house and is working night and day to do it.

The auto has, in addition, created grave social problems which have, in practice, proven to be insuperable. It is responsible, among other things, for: insoluble traffic problems, enormous highway fatalities and injuries, the transformation of whole cities into mere traffic arteries or adjuncts thereof. It is also responsible for making public transportation, which every car owner indirectly supports whether or not he ever uses it, increasingly unwieldy and uneconomical. Consider the last point rationally for a moment: Does it make sense to have an enormous number of private vehicles capable of carrying only 4 to 6 people in view of the fact that public vehicles can transport many times that number of passengers per unit? This is no brief for public transportation; service on the latter is often shoddy and over-expensive. Nevertheless, in all fairness, it must be recognized that one of the major things wrong with public transportation is the existence of an over-abundance of private autos on the road.

The car symbolizes one thing, pre-eminently: escape. Theoretically, you can fly away from "it all" in an auto. But, of course, you really can't—as you sorrowfully discover when your auto is part of the line-up waiting to get through the Holland Tunnel and either in or out of New York City on a Sunday evening, or when you're trying to park on a Saturday evening. At such times one is apt to reflect that if every American family *were* to have two cars in the garage the result would, from every reasonable point of view, be a social catastrophe.

Observe how deserted city streets are on a Sunday—more exactly, how deserted the sidewalks are. If you are walking, there are few you will meet, though all about you autos go whizzing by. It is a melancholy picture. One cannot look at the road for too long a time, the stream of passing cars is dizzying, soporific. Everyone is travelling; leaving the city. Once, travel was a means to going somewhere, now, going somewhere is an excuse for travel.

As you walk you reflect that the riders must pity you for *having*

to walk; you reflect too, on the disappointment ahead for those in the autos going to favourite parks, picnic grounds, and beaches only to discover on arrival that they have been anticipated by thousands. For that is one of the many important results of the "people's automobile"—all the good old spots are now overcrowded. Those who are left in the city on Sunday because they do not own autos and are afraid to trust themselves to the vagaries of public transportation, suddenly find the city left to them, suddenly find solitude and peace of sorts in the midst of the six-day-a-week madhouse. But softly, softly! Should the have-nots crow too loudly, the hordes will return.

We have been trying, ever so gingerly, to indicate two things about our expanding economy: 1. That the increased availability of goods and services is no indication of diminished price. The economy appears to have reached the rather absurd point where availability is, in fact, conditional upon higher costs, e.g., goods are available to many people only on credit terms which increase their price; moreover, a high rate of sale is often only a sign of rapid obsolescence which also adds to the price of commodities. 2. That a rising standard of living is by no means synonymous with an improving standard of living.

Both of these are among the reasons people are not satisfied though they possess ever so much—for much that they possess is not designed for their satisfaction but simply to sell. And it is by no means the case that the saleable need be either functional or beautiful. So Americans are always in the market for "something else", and the world is confronted by the paradox of the richest nation on earth being, at the same time, the most indebted nation on earth. Both collectively and individually, the U.S.A. is a nation of people in debt.

We have said that Americans are always in the market. One reason for this is the nature of the market itself. The marketplace in most cultures is traditionally the center of town, and provides much of the color, excitement, and stimulation of daily life. A visit to an old-style marketplace, e.g., those in smaller Mexican towns, shows us why. To the native the market is endlessly entertaining: a variety of wares, the merchants one knows; a chance to see other people; the bargaining, which is often a game of wits; most important, the fact that many of the consumers are themselves producers and merchants of wares for sale. In a word, the market is not very different from a local art exhibit, which many of artists represented attend. People are not simply vending goods, they are displaying the products of *their* skill. On the other hand, each merchant stands, in every sense, behind his wares. He has to—reputation is really important in a small village. The modern furore over brand names is a pale and phoney shadow of this: anonymity remains the primary characteristic of giant manufacturing firms as it is of the national supermarket chains that sell their products. In any case, there is more difference in the packaging of similar competing items than in anything else (we now have a new

type of engineering—"package engineering"). Genuine pride in product depends on *primary* economic relations which have virtually disappeared in an age when venders are not producers and producers do not vend, while the consumer, remote from either and exploited by both is not usually an artisan and cannot truly judge any product. Even in the sphere of production people do not commonly take pride in or feel responsible for a whole product because of the minute division of labor in the plant. Some of the old glamorous elements of marketing remain, but in emasculated form. And just because of this hollowness, the purely ballyhoo side of vending looms always larger.

Let us visit the modern marketplace and see what makes it tick. The gigantic department store is, in many respects, a monument to our time: a superabundance of commodities and services always bargain-priced (is there any other kind of price, anymore?—and if there isn't just what does the term "bargain price" mean?), always available on "easy credit" terms, always tempting one and all to buy what they can and cannot afford, what they do and do not need. Millions of things for YOU—for nothing—down. Tremendous savings (the more you buy, the more you save; spend every penny you own, and you'll have saved so much you'll be rich). What really makes the department store into such a monument to our times is its "comfort", "convenience", and "service": fluorescent lighting, air conditioning, soft music to soothe the nerves, celebrities on hand to entertain the crowd, fashion shows, contests, plushy public lounges, high-class restaurants, low-class soda fountains, gorgeous three tone toilets, marbelized water fountains, the "convenience" of having every kind of commodity located in one store, polite sales-people, a doctor, nurse, chiropodist, pharmacist, masseur, and hairdresser "on hand at all hours of the day to serve the public", revive the fainting, massage the aching. Why you could practically live at the store!—and, in fact, if you're a woman, you're expected to live there one day of each week at least.

And so hundreds of thousands of spiritually poor, if materially comfortable women, hungry for excitement, come to the truly "greatest show on earth". They come, dressed in their drab, monotonous lives, with their children, their mothers, their sisters, their friends, their husbands, and with any other packages they can drag along—and with their money or credit cards. They come gaily and yet oddly enough in half an hour their heads begin to go round, their feet start to ache, they yearn terribly for peace and quiet, for semi-darkness instead of the omnipresent brightness of fluorescent lights that seem to scorch the eyes. Even if they seat themselves on the many comfortable chairs provided by the thoughtful management they cannot relax; though their legs are not in motion their eyes are—and the ceaseless stream of visual stimuli seems to be just as tiring. Should our ladies be so untypical as to close their eyes, there is still the tremendous auditory stimulation to contend with: the chimes, loudspeakers, bells, "soft" music (what is "hard" music?), children bawling, and, of course, the unctuous sales voices

endlessly repeating: "We're not here to cheat you. We want satisfied customers. If you're satisfied you'll come back, you'll tell your friends about us . . ." and similar pearls of wisdom.

The department store somehow epitomizes the formula of our age—comfort that is uncomfortable, convenience that is inconvenient. Theoretically, it *is* convenient to buy everything in one store. In practice, unfortunately, it often takes two or more hours to get to and from that store. One seems to recall those golden times in the distant past when one shopped in several neighborhood stores instead—and did not spend an entire day on the project. And having spent less time in stores, one did not "require" medical, pharmacal or dramaturgical services; nor did one require free "soft" music (why the hell don't they play marching music, Wagner—something to wake you up, make you think, instead of sticking an insipid pacifier in your ear?).

Wretched women! It is clear that the celebrities, the lights, the music, the excessively bright colors, the pleasant but persistent sales people are designed to *tire* you, to drive you into submission, to reduce you to unthinking stupidity, to brainwash you, to break you (pleasantly, of course!), to make you buy! buy! buy! It's a battle the store wages against you, as full of stratagems and "science" as real war; a battle to lure you, trap you, fatigue you, beat you. Every purchase is a capitulation by the consumer, a victory won over him, a dollar wrested from him.

## VI

If the rising standard of living has not yet made commodities cheaper, has it at least made life more comfortable? Some people would probably say "yes", a few would say "no". The fact is, however, that before one can even begin to discuss this matter, it is necessary to introduce a commonsense if nonetheless uncommon qualification, without which the discussion makes no sense at all. Comfort, like everything else, is not *in itself* either good or bad. For example, some of the comforts of modern life are the time and work savers. But neither time saved nor work avoided are always good things. Time saved is valuable only if *saved in the execution of monotonous tasks for the execution of interesting or creative work*. Is this actually the case with most modern time savers? This has to be proven in every instance. Frozen, canned or irradiated foods may save time spent in cookery, but cooking, if not a fine art, is at least a useful one, and as such should be as productive of pleasure as any other useful art.

On the other hand, what is the time saved for? One TV executive has estimated that the average American now spends more time watching TV than he spends on any other single activity except for sleeping and working. Yet cooking (real cooking, not package mix cooking) is more apt to be creative than TV viewing. Not that it is impossible to do the latter creatively, e.g., if one



watches in a genuinely *critical* fashion—but the whole “charm” and “appeal” of TV lies in the very passivity involved.

At any rate, the reader may say, less energy is expended in watching TV than in cooking. Here again it is necessary to interject that the expenditure of smaller amounts of energy is not in and of itself a good thing. Whether or not it is valuable depends on the concrete instance. Much fatigue as we now realize, is simple boredom and the best therapy for fatigue is often precisely greater expenditure of energy.

In many important ways life has become more uncomfortable than it ever was. Consider simply the matter of the increased necessity for transportation: the great distances between the place of residence and the place of work, and between either of these and the place of play, between the shopping center and the home, the home and the school, the town and the country, etc. Suburbanization has only accentuated the problem, only heightened the need for genuine de-centralization. We do not usually look at the question of comfort in this fashion. For example, it is more commonplace to accept the “necessity” for increased transportation *and then* to consider the comfort of the vehicle that takes us where we have to go. As individuals we can hardly do otherwise. For society at large, however, it would be more profitable to consider the real problem, which is the social fragmentation that leads to individually fragmented lives.

It may perhaps be claimed that all else aside, our jobs are becoming more comfortable. If one analyzes this contention further one usually discovers that what is actually meant is that our jobs are becoming less *arduous*. Unfortunately, the fact that they are less arduous does not guarantee that they will be less alien. Much of the effort involved in lightening labor is misdirected. More often today (not always!) it is not the lightness or heaviness of the work which makes us dislike it, or tires us, but its alien aspect. The receptionist, for example, does not work “very hard” in terms of actual energy expenditure, nevertheless she probably enjoys her work neither more nor less than the coalminer. Experience has shown that it is socially far easier to solve the problem of lightening labor than to solve the problem of making it more meaningful.

For these reasons one must approach the modern claims of “easier living” with more than a little scepticism. Many of the modern comforts are merely frills which divert us from a basically uncomfortable existence. In any case, easier living is not necessarily better living.

## VII

We may briefly consider the reponse of people to the negative aspects of American life. The immediate and instinctive reaction of individuals to social irritants is not a whit different from the reaction of any other organism to uncomfortable but powerful

stimuli—withdrawal.<sup>5</sup> The alienation between laborer and labor initially results in the former's withdrawal into an activity whose usefulness to him is transparent though (or rather we should say, *because*) it has no market value; an activity which expresses his personality in an immediate and relatively rounded way. The mother withdraws into her children, the father into his hobby, the young people into their love affair. Not that children, hobbies, and love affairs are not excellent under most conditions, but rather that they are necessary to us, today, as safety valves. They offer little islands of peace and meaning apart from the general confusion.

An ever-larger number of people seem to want to separate themselves in a more-or-less fundamental fashion from the system. Adequate testimony of this is offered by the efflorescence of self-sufficient co-operatives in the Bruderhof and similar movements, the artist's colonies à la Henry Miller's,<sup>6</sup> even certain a-social implications of the "do-it-yourself" movement. (We are not concerned here with the adequacy of these responses, but merely with their being.) Another instance of the same tendency is the bumper baby crop: though more and more women are working, more and more babies are being born, which, among other things, gives the woman a chance, at least for a short while, to separate herself from the "meat-grinder" and "live a little". The bumper baby crop, incidentally, is often interpreted as a sign of optimism and happiness. We incline to the opposite view. Babies, for many of the married couples we know, are less the expression of than the means to happiness. (Under ideal conditions they should be both.) They are more characteristically designed to "save a marriage" than to fulfil it. The phenomena of teenagers "going steady", of early marriage and quick and continuous parenthood strongly suggest that young people are snatching at happiness "while there is still time".

Having a baby may sometimes be an instinctive reaction to unhappiness. For a more conscious response we turn to modern literature. Our literature has, in some measure, reflected and reacted to the negative side of American life. Both the reflection and the reaction have been more or less muted either because of psychological considerations (the doctrine of original sin is back in style and this necessarily softens social criticism—for to the extent that man is considered inherently vicious his social institutions are either above or below criticism) or for material reasons

<sup>5</sup> A caution should be entered here: If and when the organism is rendered "desperate" (we are speaking of complex organisms) or feels itself to be in a desperate situation, it will turn and fight no matter how forbidding the agent of discomfort may appear. The similarity to the reaction of an organism to internal invasion by a foreign body—as in disease—is apparent. According to Selye the General Adaptation Syndrome involves three stages: Alarm reaction, Stage of Resistance, Stage of Exhaustion. If an organism is not destroyed at any step along the way (and if the irritant does not disappear) it will follow through on this invariable pattern. (Hans Selye: *The Stress of Life*, McGraw-Hill, 1956.)

<sup>6</sup> Henry Miller: *Big Sur and the Oranges of Hieronymus Bosch*. New Directions, 1957.

(the critics are not usually independent people but part of the very mechanism, indeed large cogs in the wheels which run over all of us: editors of mass publications, TV producers, etc.). This "literature of protest" has been directed either to our enslavement by commodities (*Surfeit of Honey*, *Hidden Persuaders* and the more outspoken *Crack in the Picture Window*) or to our enslavement through conformity or security (*The Last Angry Man*, *Company Manners*, *The Organization Man*, *From the Dark Tower*).<sup>7</sup>

As noted before much of the "honey" appears, under scrutiny, to be mere sugar-water, just as the characteristic security of our age is that of an atomic shelter. In a word, the essence in both instances is: spuriousness. Real honey one can only enjoy so much of; real security, too, has its limits. Substitutes for the real thing, *because they do not truly satisfy or nourish*, are always in demand. One recalls that amusing and rather haunting novel of a few years ago *Catcher in the Rye*.<sup>7</sup> It is the story of a sensitive adolescent, Holden Caulfield, so paralyzed by the phoniness of institutions, commodities, and people that he can no longer function socially.

At least Holden "went through the motions" of living. What are we to say of the chief character of the interesting if less well-known short story "Rock-a-bye Baby"?<sup>7</sup> The "hero" simply won't get out of bed as days stretch into weeks and weeks into months. What for? He is a latter-day Oblomov—only more so. The great Russian classic depicted the paralysis of an outmoded social class. In the two modern works under discussion the paralysis affects two rather ordinary members of the upper and lower middle class respectively, and significantly, both are quite young.

It would seem that the mad scramble to make an "extra buck" by any and every means is producing, among other things, an exactly opposite effect: a rather generalized apathy, cynicism, and disillusionment. Perhaps the most amazing translation of this mood into real life terms in the last decade was the bored, sullen, hostile, and disbelieving attitude of the American public and armed forces toward the Korean "police action".

Consider for a moment the matter of our enslavement through "security". Security in our time is equated with conformity: security is supposed to lie in conformity and once we have "achieved" security we must continue to conform in order to remain "secure". Apparently, however, the price is a bit steep and we chafe restlessly under the burden of security. The spate of post-war

<sup>7</sup> Russell Lynes: *Surfeit of Honey*. Harper, 1957.

Vance Packard: *Hidden Persuaders*. McKay, 1957.

John Keats: *Crack in the Picture Window*. Houghton-Mifflin, 1956.

Gerald Greene: *The Last Angry Man*. Scribner, 1956.

Louis Kronenberger: *Company Manners*. Bobbs-Merrill, 1951.

William Whyte: *The Organization Man*. Simon & Schuster, 1956.

Ernest Pawel: *From the Dark Tower*. Macmillan, 1957.

J. D. Salinger: *Catcher in the Rye*. Little, 1951.

Arnold Grisman: *Rock-a-bye Baby*, in *Discovery*, No. 1, Pocketbooks Inc., 1952.

novels dealing in one way or another with *revolt* in the armed forces (*The Caine Mutiny*, *From Here to Eternity*, etc.) is one indication of this. On the other hand, there is an organic relation between the surfeit of security and the surfeit of commodities. We are all to have vested interests, to become "capitalists". What safer, surer, more tried and tested way to turn us into conformists. "Unfortunately", this gimmick won't work: because what we are being bribed with isn't really that good, and, more important, not everyone can be bribed.

The anguished cry of the chief character in *The Last Angry Man* is, "the bastards won't let you live". Who are the bastards?—the phonies, the exploiters, the bureaucrats. But they are human beings too, and, as the "literature of protest" shows, capable of disgust and shame, however qualified, with their rôles. The phoney in *The Last Angry Man*, Woody Thrasher, a TV advertising executive, is a pretty nice guy and so are many of the phonies and bureaucrats one meets in the course of things. They victimize but they are victims too. Their dilemma often appears to them as basically psychic. But this deceptiveness too, is a product of the times. Their problem really is that they are human, but they are more or less forced to act inhumanly. They have their lucid moments, however; moments that are lengthening into hours, moments when the truth forces itself upon them. At such times they are apt to reflect: "We are ourselves, and we are the rôles we play in society; we are both and we are neither, and we are never certain which we are, and we are unhappy; we think like men and act like commodities; there seems to be a dichotomy between the "inner" or "free" man and the "outer" or conforming man; yet how free are we?—if we can, at best, only be free in thought, but hardly ever in action or expression." "I think, therefore I am", is only part of the truth. "I am, therefore I think" is its complementary. Freedom is more than a state of mind.

It seems that fundamental dissatisfaction with its lot is fairly general among the American populace. Its political passivity does not imply cheerful acceptance of the status quo. And this passivity in and of itself sometimes plays a progressive rôle, for example, in restraining U.S. military aggression. Certain it is that the lesson of public apathy during the Korean mess has been well-learned by "our" leaders and that that lesson has played its part in keeping Dulles's "brinkmanship" on the brink instead of in the abyss. That the public dissatisfaction is even superficially vocalized by the Madison Avenue crowd (it is also a good bet that the largest sales of the "protest" literature occur among people in "communications" and allied industries) is perhaps a symptom of bad conscience on the part of the publicists as well as a sign of the extent if not the depth of the disaffection.

### VIII

The fact that the American population is now, by and large, not lacking for the necessities of life is, in a way, a pure accident.

No one really planned it that way. It just happened. The essence of the system—blindness—remains. And if most of us have the minimal requirements of life, and if the material base for utopian society is already present, the effects engendered on the individuals concerned is nevertheless considerably less than utopian. Wild, uncontrolled growth has led to the same unhappiness as prolonged deficiency. The old problem of social imbalance remains. It is this imbalance which seems endemic to the system, rather than the particular form (scarcity or surfeit) it takes. The achievement of a balanced social organism, balanced externally in relation to the natural environment and internally as between its individual atoms is what still eludes us.

The issue now is one of proportion, of avoiding being buried under the great pile of material wealth, of making the latter work for us, instead of our always working for it, of producing wealth to satisfy human need, of making need rather than profitability the determinant of what is produced, how it is produced.

The above stands in imminent danger of being considered mere empty verbiage unless one is prepared to say at least a word about the sticky question of whether or not the present expansion is *necessary* to keep the economy going. It seems fairly obvious that an expanding population requires expanding production. Unfortunately, this formulation is both too gross and too facile to tell us very much. For example, despite expanding population food surpluses grow ever larger and, incidentally, there is no decline in food prices. In a word, the mere fact of increased supply does not tell us very much about supply that will be *used*. Social relations rather than productive deficiencies are at the root of the trouble. Moreover, vast increases in luxury goods production and war production are certainly not related to the *needs* of a rising population. To be plain: unplanned expansion may be necessary to keep an *unplanned* economy going, but there is no guarantee whatever that it will satisfy human need. Increases in the production of some commodities, e.g., houses, *are* necessary (we are speaking only of the domestic market) to keep up with a rising population, but general expansion is valueless and wasteful.<sup>8</sup>

The current "boom" undoubtedly does "keep the economy going". The real question is, however, is our economy producing

<sup>8</sup> The question may arise: How does one determine if and when production of any given commodity is valueless or valuable, wasteful or useful—isn't any such decision a "mere" value judgment? The answer is—yes. Economist Gardner C. Means has recently noted that administered prices and controlled supply are characteristic of important segments of American production today. Any determination of price and supply represents a value judgment—concerning what is to be produced, for whom or for how many and in what quantity. Hence the real question for this important part of the economy is not value judgments as such but rather *who is to make them*. As for the non-monopoly areas of the economy, where the market rather than man makes decisions, there man is simply at the mercy of events, a plaything of forces he does not control. For western society, at any rate, progress has always been identical with the growth and development of consciousness, of control of informed valuation.

a way of life itself worth "keeping going"? Economic activity, after all, is not an end in itself, but a means to the satisfaction of needs, to the attainment of happiness. Our real needs are not being met today—and the surest sign of this is the very multiplication of "needs". Nymphomania is a manifestation not of sexual satisfaction but of its very opposite, and "commodity nymphomania" differs in no respect.

Economic activity has become a fetish in the U.S. The apologists for the system are so busy congratulating themselves on the fact that they seem to have found ways and means to beat the cyclical depression (war, destruction and waste of "surplus" goods, permanent consumer indebtedness, the proliferation and sale of useless luxury goods) that they have quite forgotten what it is that economic activity is engaged in *for*. An economic system is not adjudged humanly adequate just because it "keeps going". Slavery kept going for hundreds of years, Asiatic feudalism for thousands of years. Nor is the mere fact that people now have fairly steady employment an adequate index of the successful social system. Coolies, peasants, slaves have long enjoyed this same benefit. Neither do men labor to keep an economic system running; the system is supposed to run for them, not they for it. To "keep going" is hardly a human ideal. As ideal, it is more worthy of a vegetable. On the other hand, can we forget that the "keeping going" cannot with surety be extrapolated too far in this atomic age?

To be sure, most of us in the U.S. have pretty full bellies. But the price paid for the full belly is all too often forgotten. It seems a rule of modern life that as the quantity of commodities increases, the quality of life just as surely decreases. One of the major reasons for this is that the quantity increases beyond measure, beyond reason, and we are spiritually enslaved by the surplus. Our personal and social lives are dominated by excess. The "specter" that haunts America is that of surplus. To destroy that "specter" atomic and hydrogen bombs are exploded, food is burned or permitted to rot, war is indulged in, industrial strikes are fomented, and our lives are cluttered up, moronized, by an endless stream of trivia, in the form of useless and pernicious "gadgets," useless and false information.

It is time to re-evaluate this "going" concern, this "successful" economy, to weigh its meager benefits against its high costs. In social life "survival of the fittest" means "fittest to live with"—survival of the most harmonious organism. It is just harmony which is lacking in our social order, an order which, though it survives, is predicated upon imbalance and repression. The limits of such survival are more evident today than ever before.

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